

Service Manual

(1)

ORDER NO.
ARP2121

COMPACT DISC JUKEBOX

CJ-V50

• Refer to the service manual ARP2122, CJ-V50.

• This manual is applicable to the HEM type.

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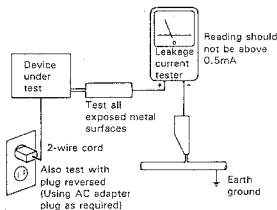
1. SAFETY INFORMATION

1. SAFETY PRECAUTIONS

The following check should be performed for the continued protection of the customer and service technician.

LEAKAGE CURRENT CHECK

Measure leakage current to a known earth ground (water pipe, conduit, etc.) by connecting a leakage current tester such as Simpson Model 229-2 or equivalent between the earth ground and all exposed metal parts of the appliance (input/output terminals, screwheads, metal overlays, control shaft, etc.). Plug the AC line cord of the appliance directly into a 120V AC 60Hz outlet and turn the AC power switch on. Any current measured must not exceed 0.5mA.



AC Leakage Test

WARNING!

Lithium batteries. Danger of explosion. Replacement must be done by qualified personnel and only by following the instructions given in the service manual.

This warning is stated on the product or in the operating instructions. When replacing the lithium batteries, follow the note below.

Dispose of the used battery promptly. Keep away from children. Do not disassemble and do not dispose of in fire. The battery used in this device may present a fire or chemical hazard if mistreated. Do not recharge, disassemble, heat above 100°C or incinerate. Replace only with the same Part Number. Use of another battery may present a risk of fire or explosion.

Note: The lithium battery installation position is shown in the exploded view and the P.C. board pattern.

ANY MEASUREMENTS NOT WITHIN THE LIMITS OUTLINED ABOVE ARE INDICATIVE OF A POTENTIAL SHOCK HAZARD AND MUST BE CORRECTED BEFORE RETURNING THE APPLIANCE TO THE CUSTOMER.

2. PRODUCT SAFETY NOTICE

Many electrical and mechanical parts in the appliance have special safety related characteristics. These are often not evident from visual inspection nor the protection afforded by them necessarily can be obtained by using replacement components rated for voltage, wattage, etc. Replacement parts which have these special safety characteristics are identified in this Service Manual.

Electrical components having such features are identified by marking with a Δ on the schematics and on the parts list in this Service Manual.

The use of a substitute replacement component which does not have the same safety characteristics as the PIONEER recommended replacement one, shown in the parts list in this Service Manual, may create shock, fire, or other hazards.

Product Safety is continuously under review and new instructions are issued from time to time. For the latest information, always consult the current PIONEER Service Manual. A subscription to, or a additional copies of, PIONEER Service Manual may be obtained at a nominal charge from PIONEER.

ADVARSEL!

Lithiumbatteri — Eksplosionsfare ved fejlagtig håndtering. Udskiftning må kun ske med batteri af samme fabrikat og type. Levér det brugte batteri tilbage til leverandøren.

Denne advarsel er angivet på produktet eller i brugsvejledningen. Ved udskiftning af lithium batterierne følges nedenstående anvisning.

Batterierne må kun udskiftes med batterier af samme type og mærke.

VARNING

Explosionsfare ved fejlagtigt batteribyte. Använd samma batterityp eller en ekvivalent typ som rekommenderas av apparattillverkaren. Kassera använt batteri enligt fabrikantens instruktion.

Denna varning finns på apparaten eller i bruksanvisningen. Följ nedanstående anvisningar vid byte av litiumbatterier. Batterierna får endast bytas ut mot litiumbatterier av samma typ och fabrikat.

(FOR EUROPEAN MODEL ONLY)

VARO!

AVATTAESSA JA SUOJALUKITUS
OMITETTAESSA OLET ALTTIINA
NÄKYMÄTTÖMÄLLE LASERSÄTEILYLLE.
ÄLÄ KATSO SÄTEESEEN.



LASER
Kuva 1
Lasersäteilyn
varoituserkki

ADVERSEL:

OSYNYLIG LASERSTRÅLING VED ÅBNING
NÅR SIKKERHEDSAFBRYDERE ER UDE AF
FUNKTION. UNDGA UDSÆTTELSE FOR
STRÅLING.

VARNINGH

OSYNYLIG LASERSTRÅLING NÅR DENNA
DEL ÄR ÖPPNAD OCH SPÄRREN
ÄR URKOPPLAD. SETRAKTA EJ STRÅLEN.

WARNING!

DEVICE INCLUDES LASER DIODE WHICH
EMITS INVISIBLE INFRARED RADIATION
WHICH IS DANGEROUS TO EYES. THERE IS
A WARNING SIGN ACCORDING TO PICTURE
1 INSIDE THE DEVICE CLOSE TO THE LASER
DIODE.



LASER
Picture 1
Warning sign for
laser radiation

IMPORTANT

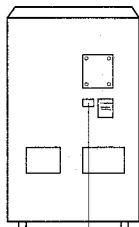
THIS PIONEER APPARATUS CONTAINS
LASER OF HIGHER CLASS THAN 1.
SERVICING OPERATION OF THE APPARATUS
SHOULD BE DONE BY A SPECIALLY
INSTRUCTED PERSON.

LASER DIODE CHARACTERISTICS

MAXIMUM OUTPUT POWER: 5 mw
WAVELENGTH: 780-785 nm

LABEL CHECK

MAIN SECTION (REAR SIDE)



VARO!

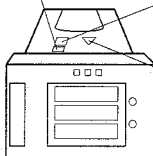
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PIONEER

CAUTION
INVISIBLE LASER
RADIATION WHEN OPEN,
AVOID EXPOSURE
TO BEAM

25W775

WEM type

CD SECTION
(REMOVING CONDITION
OF THE BONNET COVER)

ADVERSEL
OSYNYLIG LASERSTRÅLING VED ÅBNING
NÅR SIKKERHEDSAFBRYDERE ER UDE AF
FUNKTION. UNDGA UDSÆTTELSE FOR
STRÅLING.
VORSICHT!
UNSICHTBARE LASERSTRÅLUNG TRITZ AUS, WEENN DICKEIL
ODER KLAPPEI GEFÄHRLICH SEIT NICHT DEM STRAHLE AUSGESETZT!



WEM type

CLASS 1
LASER PRODUCT

VWR-328

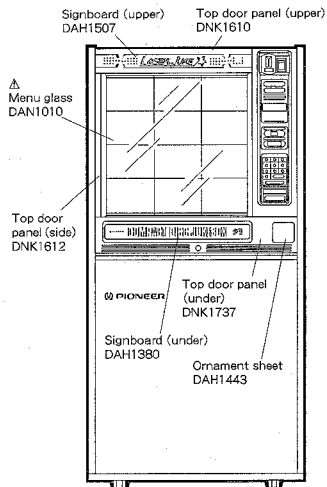
HEM type

Additional Laser Caution

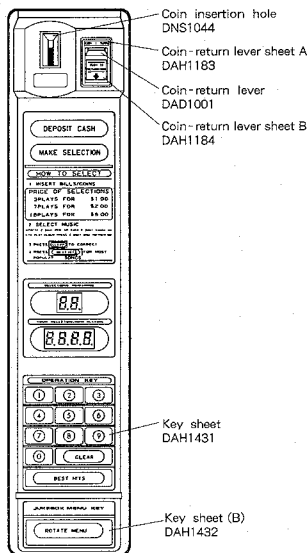
1. The player microcomputer checks the inserting condition of magazines A, B and C by using the combined signals of the SENS1 (S804), SENS2 (S805), SENS3 (S806), LOCK1 (S801), LOCK2 (S802) and LOCK3 (S803) switches. It is after these three magazines are fully inserted that commands from the control microcomputer are accepted. The laser diode is turned ON for illumination by outputting the laser diode ON signal from the control microcomputer when the CLAMP switch (S1001) (DSK1001), which signals that the tray is to be pulled from the magazine and detects clamping condition, is set to ON and the player receives the "rising command" in the disc clamping condition. If no disc is available, it turns OFF after 20 seconds. The illuminated laser diode goes out when receiving a "Reject command", a "disc change command" or a "magazine eject command". The laser diode continues to oscillate when pin ② of CXA1081S (IC1) is connected to GND or to pin ⑤.
2. If the fault condition described in 1 is induced with the cover open and with the servo mechanism block removed to be turned over, close viewing of the objective lens with the naked eye will cause exposure to a class 1 or higher laser beam.

2. PARTS LOCATIONS

2.1 EXTERIOR

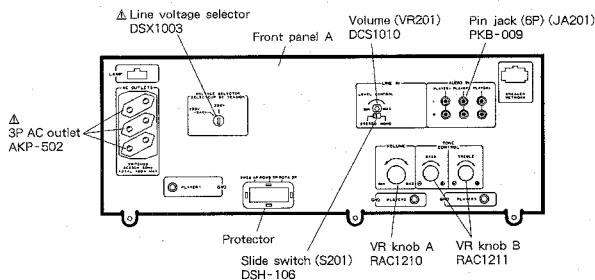


• OPERATION SECTION

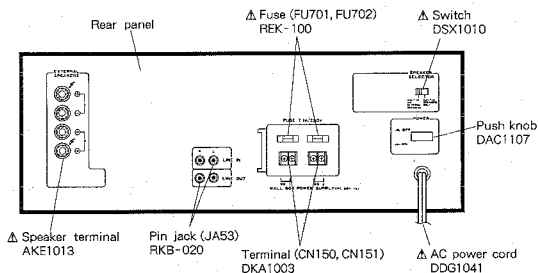


2.2 AMP SECTION

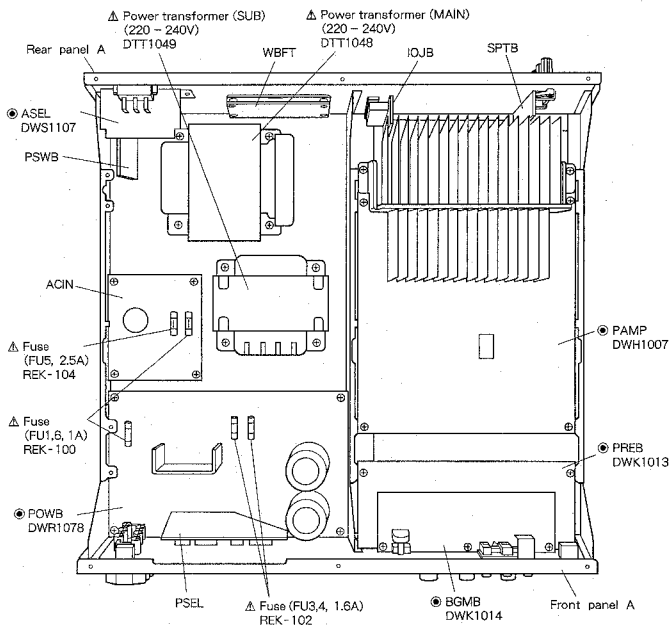
• FRONT VIEW



• REAR VIEW

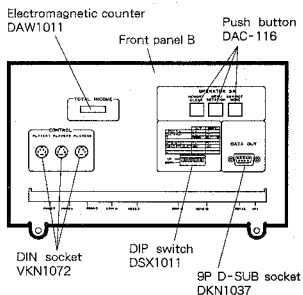


● TOP VIEW

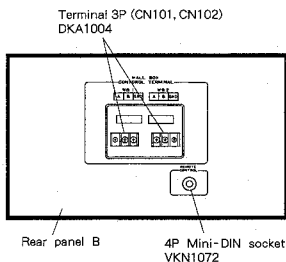


2.3 COMMANDER SECTION

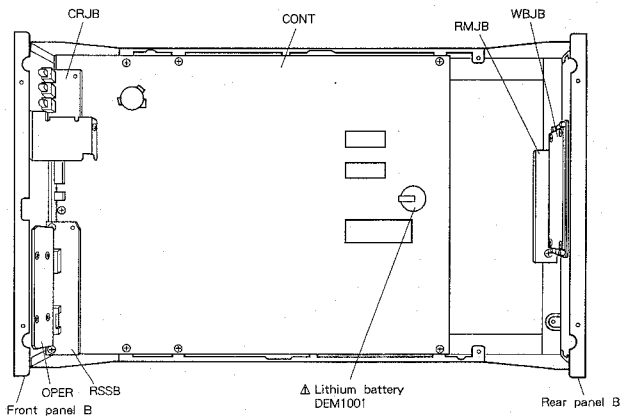
● FRONT VIEW



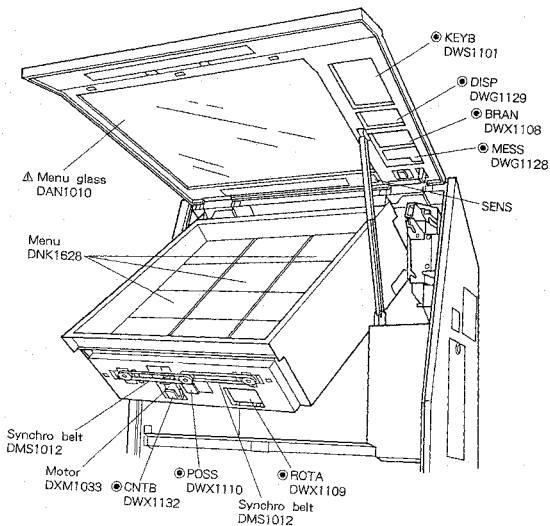
● REAR VIEW



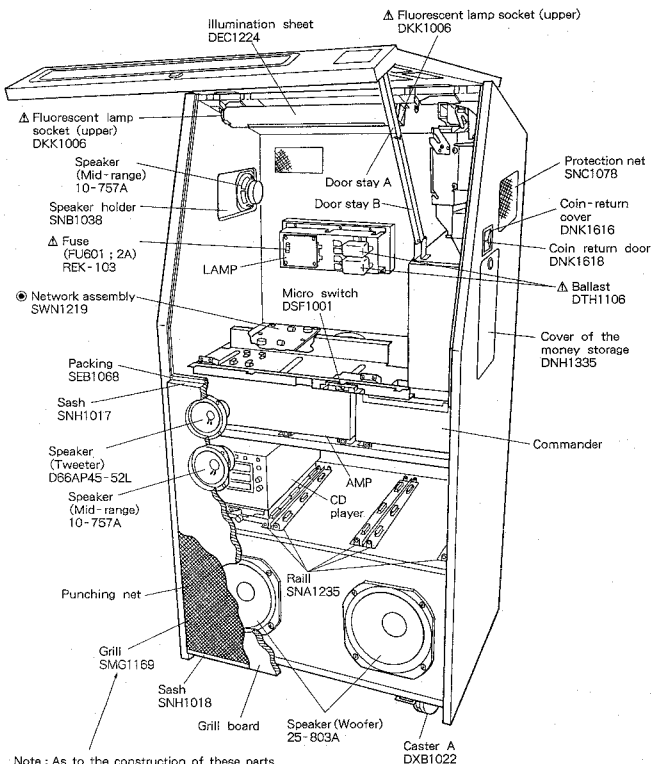
● TOP VIEW



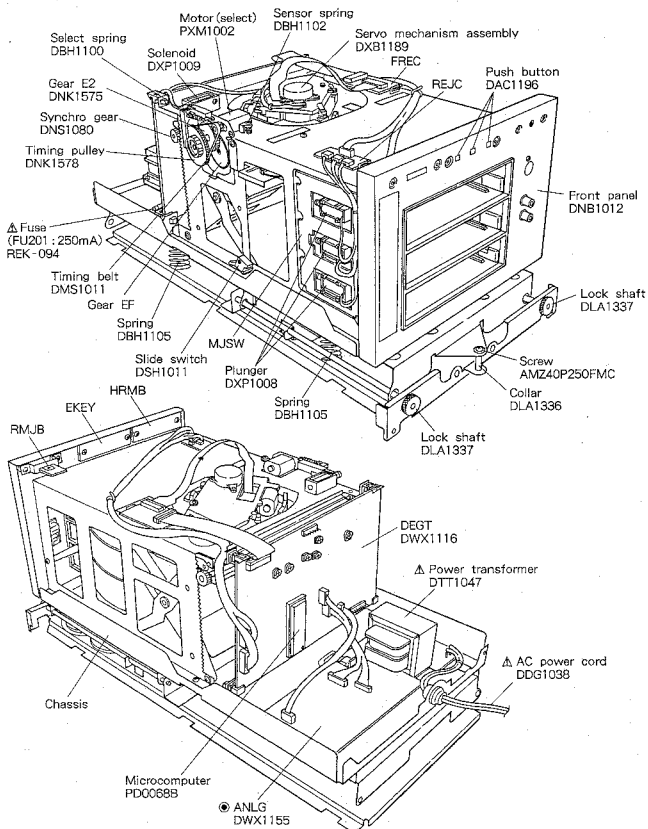
2.4 REMOVING CONDITION OF THE UNDER LAMP ASSEMBLY



2.5 REMOVING CONDITION OF THE MENU BOARD



2.6 CD PLAYER SECTION



3. DISASSEMBLY

3.1 REMOVING THE TOP DOOR ASSEMBLY

1. Open the menu door, and remove six screws ① and two R pins to remove the menu board assembly.

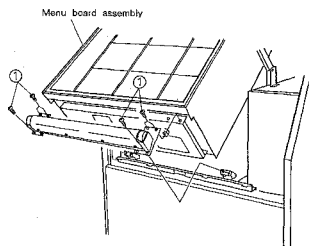


Fig. 3-1

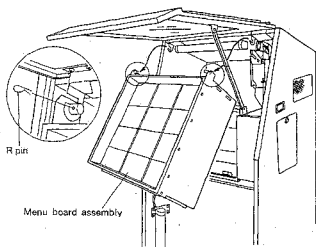


Fig. 3-2

2. Loosen four screws ② and remove two screws ③ to remove the upper lamp assembly.
3. Remove two screws ④ to remove the CA holder C assembly.

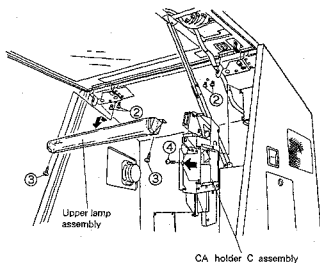


Fig. 3-3

4. Remove six screws ⑤, two screws ⑥ and two screws ⑦ to remove the top door assembly.

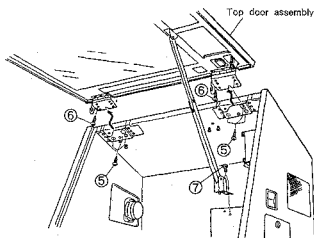


Fig. 3-4

3.2 REMOVING THE MENU MOTOR ASSEMBLY

1. Remove two screws ① to remove the menu motor assembly.

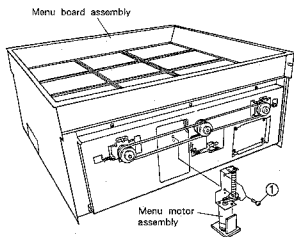


Fig. 3-5

3.3 REMOVING THE SYNCHRO BELT

1. Loosen two screws ① and remove two springs with plier, and remove two synchro belts by pushing the synchro pulley in the direction of arrow.

Note: When the synchro belt is replaced, be sure to perform the three surfaces of the menu synchronous adjustment.

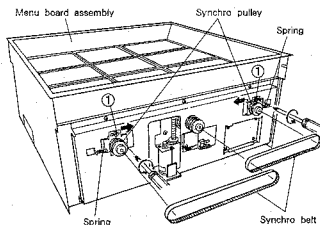


Fig. 3-6

3.4 REMOVING THE LAMP AND NETWORK ASSEMBLY

1. Remove six screws ① to remove the network assembly.
2. Remove four screws ② to remove the LAMP.

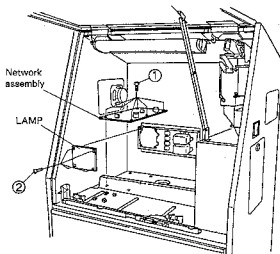


Fig. 3-7

3.5 REMOVING THE ROTA AND POSS

1. Remove four screws ① to remove the ROTA.
2. Remove a screw ② to remove the POSS.

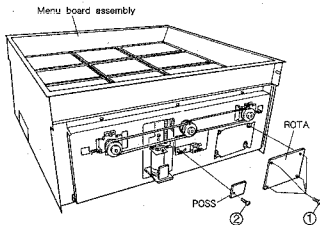


Fig. 3-8

3.6 REMOVING THE MESS, BRAN, DISP AND KEYB

1. Remove four screws ① to remove the MESS.
2. Remove four screws ② to remove the BRAN.
3. Remove four screws ③ to remove the DISP.
4. Remove eight screws ④ to remove the KEYB.
5. Remove two screws ⑤ to remove the SENS.

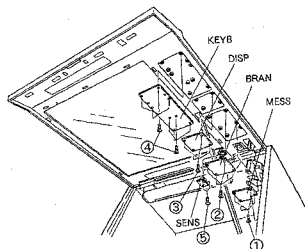


Fig. 3-9

3.7 REMOVING THE AMP, COMMANDER AND CD PLAYER

1. Remove three screws ① to remove the AMP.
2. Remove two screws ② to remove the commander.
3. Remove two screws ③ to remove the CD player.

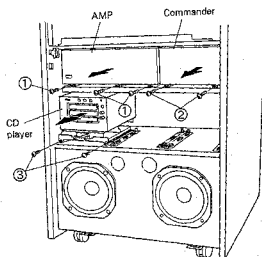


Fig. 3-10

3.8 REMOVING THE SPEAKER (WOOFER)

1. Remove four screws ① and disconnect the connector of speaker cord to remove the speaker.

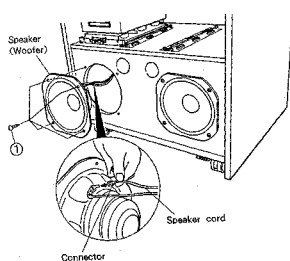


Fig. 3-11

3.9 REMOVING THE GLASS

1. Remove the top door assembly. (Refer to section 3.1.)
2. Set the glass side of top door assembly to the downward. Remove thirty-seven screws ① to remove the top door base, then remove the glass.

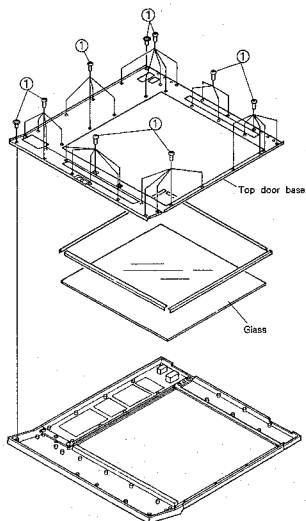


Fig. 3-12

3.10 REMOVING THE GLOW LAMP

Refer to the operating instructions (page 20).

4. P. C. BOARDS NAME

MAIN SECTION

MESS.....MESSAGE
 DISP.....DISPLAY
 KEYB.....KEYBOARD
 BRAN.....BRANCH
 ROTA.....ROTATION
 POSS.....POSITION SENSOR
 LAMP.....LAMP
 CNTB.....COUNTER BOARD
 PAMP.....POWER AMPLIFIER
 SPTB.....SPEAKER TERMINAL BOARD
 PREB.....PRE AMPLIFIER BOARD
 POWB.....POWER BOARD
 ACIN.....AC INPUT BOARD
 PSEL.....PRIMARY VOLTAGE SELECTOR BOARD
 ASEL.....AMPLIFIER VOLTAGE SELECTOR BOARD
 PSWB.....POWER SWITCH BOARD
 CONT.....CONTROL
 OPER.....OPERATION
 CRJB.....CD REMOTE JACK BOARD
 RMJB.....REMOTE CONTROL JACK BOARD
 SENS.....SENSOR
 WBJB.....WALL BOX JACK BOARD
 RSSB.....RS232C AND SW BOARD
 BGMB.....BACK GROUND MUSIC BOARD
 IOJB.....IN OUT JACK BOARD
 WBFT.....WALL BOX FUSE TERMINAL

CD PLAYER SECTION

EKEY.....EJECT KEY
 DEGT.....DIGITAL DECODING UNIT
 ANLG.....ANALOG UNIT
 DJAK.....DIGITAL JACK
 PJAK.....PIN JACK
 MJSW.....MAGAZINE EJECT SWITCH
 SENS.....SENSOR
 REJC.....REJECT
 FREC.....FLEXIBLE READER CONNECTOR
 HRMB.....HOUR METER BOARD
 RMJB.....REMOTE JACK BOARD

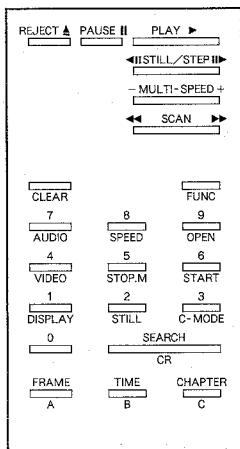
5. SERVICE MODE

- As to using the service mode, refer to the operating instructions (pages 24 - 28).

And also as to the cord table of the service mode, refer to the operating instructions (pages 20 - 23).

- Shows the function table of the remote control (RU-V101) for service as follows. When operating the CD changer section directly, it is able to operate as shown in the below by connect the wired-remote control to the CD changer.

5.1 FUNCTION TABLE OF THE REMOTE CONTROL FOR SERVICE



*1 REJECT	: Spindle stop
*1 PAUSE	: Pause
*1 PLAY	: Play
*2 STILL/STEP	: Disc select
*2 STILL/STEP	: Disc return
*2 MULTI-SPEED +	: Test command
*2 MULTI-SPEED -	: Test command
*1 SCAN	: Scan fwd
*1 SCAN	: Scan rev
*1 CLEAR	: Clear
*2 FRAME	: Frame set
*2 TIME	: Time set
*2 CHAPTER	: Track set
*1 SEARCH	: Search
*1 10key	: Numerical input
DISPLAY (FUNC + 1)	: no entry
STILL (FUNC + 2)	: no entry
C-MODE (FUNC + 3)	: no entry
VIDEO (FUNC + 4)	: no entry
*1 STOP.M (FUNC + 5)	: Stop marker
*1 START (FUNC + 6)	: Start
AUDIO (FUNC + 7)	: no entry
SPEED (FUNC + 8)	: no entry
*1 OPEN (FUNC + 9)	: Magazine eject

*1 Normal function command
 *2 Function command is different from the LD-V530.
 Not marked No entry command

● Test command

- 0 + MULTI-SPEED (+, -) keys : LD-ON
 - 1 + MULTI-SPEED (+, -) keys : FOCUS IN
 - 2 + MULTI-SPEED (+, -) keys : Spindle kick
 - 3 + MULTI-SPEED (+, -) keys : Tracking and slider servo ON
 - 4 + MULTI-SPEED (+, -) keys : Slider fwd (500ms)
 - 5 + MULTI-SPEED (+, -) keys : Slider rev (500ms)
 - 6 + MULTI-SPEED (+, -) keys : Tracking and slider servo OFF
 - 7 + MULTI-SPEED (+, -) keys : Slider stop and spindle stop
 - 8 + MULTI-SPEED (+, -) keys : Slider stop and spindle stop
 - 9 + MULTI-SPEED (+, -) keys : LD-OFF
- } Stop by MULTI-SPEED (+, -) key

6. NOTES ON REPLACING THE LITHIUM BATTERY AND RAM (IC2 : HM62256LP-12)

- When replacing the Lithium battery (DEM1001) or the RAM (IC2 : HM62256LP-12) in the CONT unit of the commander block, clear RAM data in the following manner.

If the data is not cleared, a malfunction may occur.

● How to clear

Ⓐ If the accessory wired-remote control of the CJ-V50A is existed, insert the wired-remote control (accessory of the CJ-V50A) to the mini DIN connector (4P) on the rear panel of the commander.

Ⓑ If the accessory wired-remote control of the CJ-V50A is not existed, connect four pins of the mini DIN connector (4P) on the RMJB unit to the chassis (GND).

1. Set the power switch to OFF and all the function switches of the commander block to ON.

2. While simultaneously pressing four keys, the volume + and - keys and the cancel A and B keys on the remote control unit, set the power switch to ON. A buzzer sounds in a few seconds, indicating that the clear operation is completed.

(Note : An error may occur if you set the power switch to OFF while pressing these four keys.)

When the data is cleared, the rate settings return to their default values and all other data become 0. Be careful when performing this operation as it sets even the non-resettable data all to 0.

Service Manual

PIONEER
The Art of Entertainment



ORDER NO.
ARP2122

COMPACT DISC JUKEBOX

CJ-V50 PD-MV55

• Refer to the service manual (1) ARP2121, CJ-V50.

- This manual is applicable to the CJ-V50/HEM and PD-MV55/WEM types.
- PD-MV55/WEM type is a optional CD player of the CJ-V50/HEM type.
- PD-MV55/WEM type is the same as the built-in CD player of the CJ-V50/HEM type except packing and accessory parts.
- Ce manuel pour le service comprend les explications de réglage en français.
- Este manual de servicio trata del método ajuste escrito en español.

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5. BLOCK DIAGRAM	84	8. IC DESCRIPTION	125

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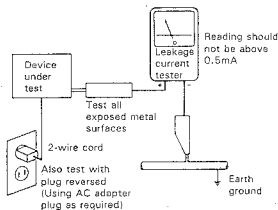
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Dispose of the used battery promptly. Keep away from children. Do not disassemble and do not dispose of in fire.

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(FOR EUROPEAN MODEL ONLY)

VARO!

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OHITETTAESSA OLET ALTITINA
NÄKYMÄTTÖMÄLLE LASERSÄTEILYLLE.
ÄLÄ KATSO SÄTEESEEN.

ADVARSEL:

USYNNIG LASERSTRÅLING VED ÅBNING
NÅR SIKKERHEDSAFBRYDERE ER UDE AF
FUNKTION UDGÅR UDSÆTTELSE FOR
STRÅLING.

VARNING!

OSYNNIG LASERSTRÅLING NÅR DENNA
DEL ÄR ÖPPNAD OCH SPÄRREN
ÄR URKOPPLAD. BETRÄKTA EJ STRÅLEN.



LASER
Kuva 1
Lasersäteilyn
varoitusmerkki

WARNING!

DEVICE INCLUDES LASER DIODE WHICH
EMITS INVISIBLE INFRARED RADIATION
WHICH IS DANGEROUS TO EYES. THERE IS
A WARNING SIGN ACCORDING TO PICTURE
1 INSIDE THE DEVICE CLOSE TO THE LASER
DIODE.



LASER
Picture 1
Warning sign for
laser radiation

IMPORTANT

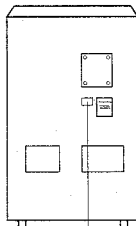
THIS PIONEER APPARATUS CONTAINS
LASER OF HIGHER CLASS THAN 1.
SERVICING OPERATION OF THE APPARATUS
SHOULD BE DONE BY A SPECIALLY
INSTRUCTED PERSON.

LASER DIODE CHARACTERISTICS

MAXIMUM OUTPUT POWER: 5 mw
WAVELENGTH: 780-785 nm

LABEL CHECK

• MAIN SECTION (REAR SIDE)



VARO!
Avatessa ja suojalukitus ohitetta-
essa olet alttina näkymättömälle
lasersäteilylle. Älä katso säteeseen.
VARNING!
Osynlig laserstrålning när denna del
är öppnad och spärren är urkopplad.
Betrakta ej strålen.

PFRV0223

CAUTION
INVISIBLE LASER
RADIATION WHEN OPEN,
AVOID EXPOSURE
TO BEAM

GRV1018

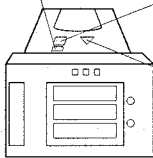
WEM type

ADVARSEL
OSYNNIG LASERSTRÅLING VED ÅBNING NÅR SIKKERHEDS-
AFBRYDERE ER UDE AF FUNKTION
UDGÅR UDSÆTTELSE FOR STRÅLING.
VORSICHT!
UNSEHBARE LASERSTRÅLUNG TRITTS AUS. WENN SICHER-
HEITSABSPERRUNG NICHT NACH DEM STRAHLEN AUSGETRITT



WEM type

• CD SECTION
(REMOVING CONDITION
OF THE BONNET COVER)



CLASS 1
LASER PRODUCT

VIEW 328

HEM type

Additional Laser Caution

1. The player microcomputer checks the inserting condition of magazines A, B and C by using the combined signals of the SENS1 (S804), SENS2 (S805), SENS3 (S806), LOCK1 (S801), LOCK2 (S802) and LOCK3 (S803) switches. It is after these three magazines are fully inserted that commands from the control microcomputer are accepted. The laser diode is turned ON for illumination by outputting the laser diode ON signal from the control microcomputer when the CLAMP switch (S1001) (DSK1001), which signals that the tray is to be pulled from the magazine and detects clamping condition, is set to ON and the player receives the "rising command" in the disc clamping condition. If no disc is available, it turns OFF after 20 seconds. The illuminated laser diode goes out when receiving a "Reject command", a "disc change command" or a "magazine eject command". The laser diode continues to oscillate when pin ② of CXA1081S (IC1) is connected to GND or to pin ③.
2. If the fault condition described in 1 is induced with the cover open and with the servo mechanism block removed to be turned over, close viewing of the objective lens with the naked eye will cause exposure to a class 1 or higher laser beam.

2. EXPLODED VIEWS AND PARTS LIST

NOTES :

- Parts without part number cannot be supplied.
- The Δ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.
- Parts marked by "◎" are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.

2.1 MAIN SECTION

2.1.1 EXTERIOR (1)

Parts List

Mark	No.	Part No.	Description	Mark	No.	Part No.	Description
	1	DAH1507	Sign board (upper)		40	SNH1018	Sash
	2	DAH1380	Sign board (under)		41	SNH1017	Sash
	3	DAH1183	Coin-return lever sheet A		42	SEB1072	Cushion
	4	DAH1443	Ornament sheet		43	SEW1014	Safety belt
	5	SBA-194	Screw		44	SEB1068	Packing
	6	DAH1431	Key sheet		45	SDF1013	Earth lug assembly
	7	DNK1236	Key knob A		46	SNA1233	Frame
	8	DNK1214	Key knob B		47	PMB50P160FZK	Screw
	9	DAH1432	Key sheet (B)		48	DEL-110	Fluorescent lamp
	10	CWC31P200FZK	Screw		49	SLH1050	Rail assembly
	11	SNB1035	Door stopper		50	CWC35P200FZK	Screw
	12	RWC31P200FUC	Screw		101		DS holder assembly
	13	SNB1037	Hook holder		102		Key plate (B)
	14	SNX1034	Magnet catch		103		Shield packing (B)
	15	DNK1618	Coin-return door		104		Coin guide (B)
	16	DNK1616	Coin-return hole cover		105		Coin-return tray
	17	DNH1335	Cover of the money storage		106		Coin box assembly
	18	DNF1258	Reinforced plate		107		Stopper B
	19	10-757A	Speaker (Mid-range)		108		Reflection plate
	20	D66AP45-52L	Speaker (Tweeter)		109		Socket holder (S)
	21	SMG1169	Grill		110		Socket holder (L)
	22	YE30FUC	E ring $\phi 3$		111		Lamp bracket (L)
	23	DEC1224	Illumination sheet		112		Lamp bracket (R)
Δ	24	DKK1008	Fluorescent lamp socket (upper)		113		CB cushion
					114		Nut
					115		Cabinet
	25	DEC1220	Bushing				
	26	DEC-176	Plastic rivet		116		Punching net
	27	PMH30P060FMC	Screw		117		Badge
	28	TNC35P140FZK	Screw		118		Tape A
	29	SBA1061	Screw		119		Grill board
					120		Stopper A
	30	RWC35P160FZK	Screw				
	31	IPZ30P060FMC	Screw				
	32	BBZ30P060FMC	Screw				
	33	DBA1007	Screw (3.5 \times 12mm)				
	34	PMB40P080FMC	Screw				
	35	IPZ30P080FMC	Screw				
	36	PMA60P100FMC	Screw				
	37	SNB1039	Catch plate L				
	38	SNB1040	Catch plate R				
	39	SNB1041	Door hinge				

Parts List

Mark	No.	Part No.	Description
	1	DNK1627	Plate
	2	SNA1235	Rail
	3	25-803A	Speaker (Woofer)
	4	DSF1001	Micro switch
	5	DBH1125	O spring
	6	SNA1220	Reinforced plate
	7	DXB1022	Caster A
	8	DXB1023	Caster B
	9	YE20FUC	E ring $\phi 2$
	10	B5Z30P060FMC	Screw
	11	AMZ40P080FMC	Screw
	12	TNC35P140FZK	Screw
	13	PMH20P100FMC	Screw
	14	DBA1007	Screw (3.5 \times 12mm)
	15	SBA1065	Screw
	16	PMB50P300FMC	Screw
	17	SBA-194	Screw
Δ	18	DDE1034	Connection cord
	19	PDE1065	Cord with pin plug
	20	DEC1184	Shell clip
	21	YE30FUC	E ring $\phi 3$
	22	SNA1224	Earth plate
	101		Top door stay
	102		MB fixing plate
	103		Door SW cam
	104		Door switch holder assembly
	105		. . . . .
	106		Cabinet
	107		Airway cover
	108		Earth lug assembly
	109		Cord clasper
	110		R pin
	111		Magazine assembly
	112		Tape B

2.1.3 EXTERIOR (3)

Parts List

Mark	No.	Part No.	Description	Mark	No.	Part No.	Description
△	1	DTH1106	Ballast		101		LAMP
△	2	DKK1001	Glow lamp socket		102		Stay A
●	3	SWN1219	Network assembly		103		Glow lamp
△	4	REK-103	Fuse (2A, FU801)		104		CA holder A
	5	10-757A	Speaker (Mid-range)		105		Hinge holder
	6	SNB1038	Speaker holder		106		Rear plate
	7	DXB1193	Hinge		107		CH lever B
	8	DBK1015	Accepter plate spring		108		CA holder C assembly
	9	BBZ30P060FMC	Screw		109		Edge guard (B)
	10	DBA1007	Screw (3.5 × 12mm)		110		Coin guide cover
	11	TNC35P140FZK	Screw		111		Insertion guide
	12	AYC30P250FMC	Screw		112		Cord clasper
	13	AMZ30P080FZK	Screw		113		HL holder assembly
	14	BSZ40P060FZK	Screw		114		CH lever assembly A
	15	BBZ40P080FMC	Screw		115		Bill holder (F)
	16	BBZ30P080FMC	Screw		116		Bill holder (L)
	17	PEZ30P120FMC	Screw		117		Bill holder (RE)
	18	DBH1037	CA spring		118		Bill holder (R)
	19	YE30FUC	E ring φ 3		119		DS shaft A
	20	IPZ30P080FMC	Screw		120		DS base
	21	PMB40P080FMC	Screw		121		Door stay A
	22	AMZ40P080FMC	Screw		122		Cord clasper
	23	SNC1078	Protection net		123		DS shaft B
	24	DND1022	Door stay B		124		Tape C
					125		Tape D
					126		Coin guide (C)
					127		Ornament sash
					128		Shield packing (A)
					129		Cabinet
					130		Coin guide (D)
					131		Key plate (A)
					132		Insulation sheet

Parts List

Mark	No.	Part No.	Description	Mark	No.	Part No.	Description
	1	DNK1633	Shaft holder		39	BBZ30P060FMC	Screw
	2	DNF1257	Corner edge		40	PMH30P060FMC	Screw
	3	DNK1629	Menu cap (L)		41	SMZ30H200FMC	Screw
	4	DNK1630	Menu cap (M)		42	BMZ26P060FMC	Screw
	5	DEC1252	Menu sheet		43	ZMD26H030FBT	Screw
	6	DNK1621	Worm wheel		44	BPZ30P080FCU	Screw
	7	DNK1626	Side ornament plate		45	AMZ30P060FZK	Screw
	8	DEC1250	Side ornament plate sheet (L)		46	ZMD40H080FBT	Screw
	9	DEC1251	Side ornament plate sheet (R)		47	DNA1070	Side frame (L)
	10	DNK1627	Ornament plate		48	DNA1071	Side frame (R)
	11	DEC1224	Illumination sheet		49	DEL-110	Fluorescent lamp
△	12	DKK1006	Fluorescent lamp socket (upper L)	●	50	DWX1110	POSS
△	13	DKK1007	Fluorescent lamp socket (under L)	●	51	DWX1109	ROTA
				●	52	DWX1132	CNTB
	14	DEC1220	Bushing		101		.....
	15	DXB-108	Bearing		102		.....
	16	DBH1107	Tension spring (under)		103		Top cover
	17	DMS1012	Synchro belt		104		.....
	18	DNK1622	Center pulley		105		.....
	19	DNK1623	Synchro pulley		106		Back frame
	20	DBH1108	Adjustment spring		107		.....
	21	DEC-176	Plastic rivet		108		Reflection plate
	22	VBK-002	Speed nut		109		Socket holder (L)
	23	DNK1632	Menu cap (U)		110		Socket holder (S)
	24	DNK1628	Menu		111		Lamp plate (L)
	25	DLA1300	Worm gear		112		Lamp plate (R)
	26	DNK1620	Pulley		113		Tension plate (under)
	27	DNK1624	Worm shaft holder		114		Under frame
	28	DMS1006	S2M timing belt		115		Adjustment plate
	29	DXB1160	Encoder disc assembly		116		Cord clasper
	30	DXM1033	Motor		117		Triangle frame (L)
	31	DXX1368	Motor assembly		118		Triangle frame (S)
	32	CEANP010M50	C702,C704		119		.....
	33	CGDYX104M25	C701,C703		120		Motor holder
	34	WA42D080D050	Washer		121		Sensor holder
	35	BBZ30P080FZK	Screw		122		Motor pulley
	36	BBZ40P080FMC	Screw				
	37	ZMD40H080FBT	Screw				
	38	SMZ30H120FBT	Screw				

2.1.5 AMP SECTION

Parts List

Mark	No.	Part No.	Description	Mark	No.	Part No.	Description
●	1	DWR1078	POWB		101		ACIN
●	2	DWK1013	PREB		102		WBFT
●	3	DWH1007	PAMP		103		PSWB
△	4	REK-100	Fuse		104		• • • • •
			(1A, FU1,FU6,FU701,FU702)		105		SPTB
△	5	REK-102	Fuse (1.6A, FU3,FU4)				
					106		IOJB
△	6	REK-104	Fuse (2.5A, FU5)		107		Side frame L
△	7	DTT1048	Main power transformer		108		Side frame R
△	8	AKP-502	3P AC outlet		109		Center frame
△	9	DDG1041	AC power cord		110		Front panel A
△	10	CM-22B	Strain relief				
					111		Protector
	11	RAC1210	VR knob A		112		Wire clip
	12	RAC1211	VR knob B		113		Transformer frame
	13	DLA-177	Staddle		114		Cord clasper
	14	DAC1107	Push knob		115		Rear panel A
	15	BBZ30P060FMC	Screw				
					116		P.C.B. stopper
	16	BBZ30P060FZK	Screw		117		Heat sink
	17	BBZ40P060FMC	Screw		118		PF holder
	18	BBZ30P140FMC	Screw		119		Connector assembly
	19	FMB40P060FMC	Screw		120		Connector assembly
	20	AMZ30P060FZK	Screw				
					121		Earth terminal
△	21	DTT1049	Sub power transformer		122		PSEL
●	22	DWS1107	ASEL		123		• • • • •
	23	DNK1893	Terminal cover		124		Terminal holder
●	24	DWK1014	BGMB		125		P.C.B holder B
					126		Spacer

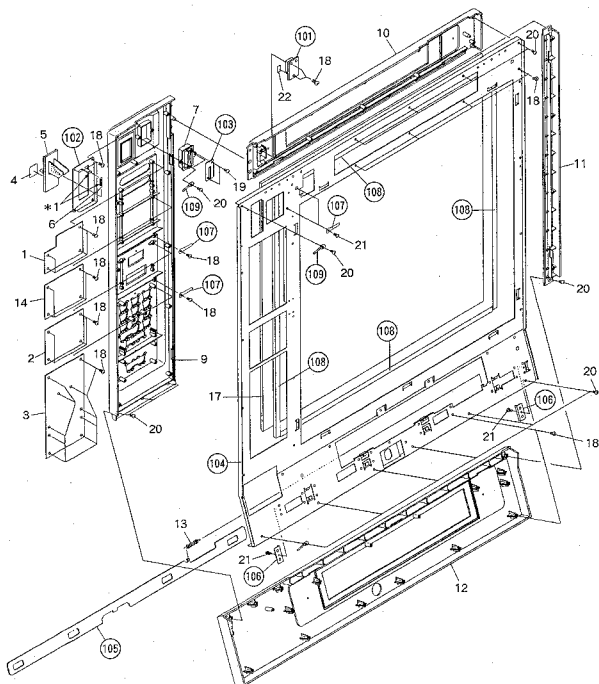
Parts List

Mark	No.	Part No.	Description
	1		.....
Δ	2	DEM1001	Lithium batteries
	3	DAW1011	Electromagnetic counter
	4	DAC-116	Push button
	5		.....
	6	BBZ30P080FZK	Screw
	7	BBZ30P060FMC	Screw
	8	PMB30P060FCU	Screw
	101		RSSB
	102		CRJB
	103		OPER
	104		WBJB
	105		RMB
	106		Front panel B
	107		P.C.B holder A
	108		Counter holder
	109		P.C.B. holder
	110		Side frame L
	111		Side frame R
	112		Reinforced frame
	113		Rear panel B
	114		Cushion
	115		CONT
	116		Bolt
	117		Cord clasper E
	118		Cord clasper
	119		P.C.B holder C
	120		Terminal holder
	121		Terminal holder
	122		Terminal holder C

2.1.7 TOP DOOR SECTION

Parts List

Mark	No.	Part No.	Description	Mark	No.	Part No.	Description
●	1	DWG1128	MESS		101		SENS
●	2	DWG1129	DISP		102		Coin-return lever fixing plate
●	3	DWS1101	KEYB				Coin slit
	4	DAH1184	Coin-return lever sheet B		103		Top door base
	5	DAD1001	Coin-return lever		104		Top door lock plate
					105		
	6	DBH1033	Coin-return lever spring				
	7	DNS1044	Coin insertion hole		106		Lock plate stopper
	8		• • • • •		107		Cord clamber
	9	DNK1609	Operation panel		108		Glass sash
	10	DNK1610	Top door panel (upper)		109		Earth lug assembly
	11	DNK1612	Top door panel (side)				
	12	DNK1737	Top door panel (under)				
	13	DBH1034	Lock spring				
●	14	DWX1108	BRAN				
	15		• • • • •				
	16		• • • • •				
△	17	DAN1010	Menu glass				
	18	BPZ30P080FCU	Screw				
	19	FMH30P120FMC	Screw				
	20	IPZ30P080FMC	Screw				
	21	BBZ30P080FMC	Screw				
	22	DEC1356	IR filter				



*1: Silicon Adhesive GYL-014

2.2 CD SECTION

2.2.1 EXTERIOR

Parts List

Mark	No.	Part No.	Description	Mark	No.	Part No.	Description
	1	DNE1083	Bonnet		101		Insulation plate B
	2	DXX1357	Bonnet assembly		102		HRMB
	3	DRW1151	Label A		103		EKEY
	4	DNB1012	Front panel		104		RMJB
	5	VCX-006	Hour meter		105		DIAK
	6	DAC1196	Push button		106		PIAK
	7	DTT1047	Power transformer (T201)		107		Chassis
	8	REK-094	Fuse (250mA, FU201)		108		Upper base
	9	DWX1155	ANLG		109		Under base
	10	DEC-176	Plastic rivet		110		Slipping angle
	11	RNH-184	Cord clasper		111		Jack holder
	12	DLA1336	Coller		112		Insulation sheet
	13	DNK1179	SP holder				
	14	DNF1075	Plate B				
	15	DBH1105	Spring				
	16	DDG1038	AC power cord				
	17		.....			
	18	DLA1337	Lock shaft				
	19	DEB1123	Rubber washer				
	20	BBZ30P060FMC	Screw				
	21	PMZ30P040FMC	Screw				
	22	IFZ30P060FMC	Screw				
	23	AMZ30P060FMC	Screw				
	24	FMZ30P060FMC	Screw				
	25	PDZ30P050FMC	Screw				
	26	BBZ40P060FMC	Screw				
	27	AMZ40P250FMC	Screw				
	28	DDD1027	17P flexible cord				
	29	CM-22B	Strain relief				

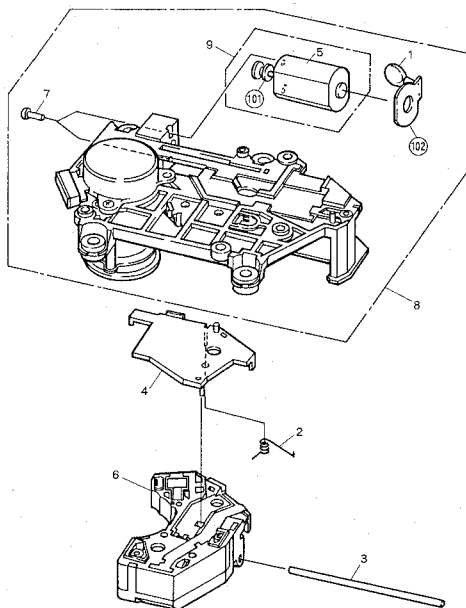
Parts List

Mark	No.	Part No.	Description	Mark	No.	Part No.	Description
	1	DNK1566	Lock lever		51	BMZ26P120FMC	Screw
	2	DXP1008	Plunger		52	PCZ30P050FZK	Screw
	3	DBH1101	Lock spring		53	DBA10023	Link screw
	4	PBH1015	SM spring		54	PBA1002	Floating screw
	5	DBK1028	Spring		55	PBA-125	Screw
	6	REC1005	Damper assembly		56	WT26D047D050	Washer
	7	PBH-465	Eject spring		57	WT26D047D025	Washer
	8	DMS1011	Timing belt		58	WA31D054D050	Washer
	9	DNK1578	Timing pulley		59	WA31D054D025	Washer
	10	DNK1575	Gear E2		60	YE25FUC	E ring
	11	DSH1011	Slide switch		61	WT31D054D050	Washer
	12	PXM1002	Motor (SELECT, LOADING)		62	DXX1358	Select motor assembly
	13	DBH1100	Select spring		63	DXP1009	Solenoid
	14	DNK1579	Select lever		64	BMZ26P030FMC	Screw
	15	DBH1102	Sensor spring		65	WT31D054D025	Washer
	16	RNH-184	Cord clamper		66	ZMD26H040FBT	Screw
	17	DWX1116	DEGT		67	DXB1189	Servo mechanism assembly
	18	DEC1237	Sheet		101		MJSW
	19	FNW1110	Cam		102		Side guide L
	20	FNW1111	Upper tray		103		SM select A
	21	PED1001	Cushion A		104		Top guide
	22	DNK1581	Clamper holder B		105		Side guide R
	23	DNS1080	Synchro gear		106		Center guide
	24	DNK1577	Turn drive lever		107		Eject lever
	25	DNK1574	Clamper cam		108		SM select B
	26	PYY1025	Motor assembly		109		Bottom guide
	27	DNK1573	Clamper lever		110		Guide bar
	28	DSK1001	Lever switch(S1001,CLAMP)		111		Gear EF
	29	DNK1569	Gear A		112		Gear angle
	30	DNK1570	Gear B		113		Motor base
	31	DEB1104	Belt		114		Sensor holder
	32	PNW1095	Gear pulley		115		REJC
	33	PBH1016	Clamper spring T		116		Sensor plate
	34	DBH1120	Clamper spring B		117		Main chassis
	35	DNK1572	Drive plate		118		FREC
	36	DNK1571	Drive lever		119		Insulation plate A
	37	FBP-001	Steel ball $\phi 4$		120		Card edge spacer
	38	DBH1108	Tension spring		121		Corner post
	39	DNK1568	Main gear		122		SENS
	40	PNW1107	Clamper holder T		123		.....
	41	FBP-009	Steel ball $\phi 3$		124		Upper chassis
	42	PNW1857	Clamper		125		Rubber tube
	43	DLA1296	Roller		126		Synchro shaft
	44	FEB1014	Floating rubber		127		Sub chassis
	45	DEC-176	Plastic rivet		128		Hold plate
	46	BPZ20P080FZK	Screw		129		Link plate
	47	BPZ30P100FMC	Screw		130		Link L
	48	BSZ26P040FMC	Screw		131		Link R
	49	PMZ20P030FMC	Screw		132		Motor pulley
	50	PMZ20P080FMC	Screw		133		Motor pulley

2.2.3 SERVO MECHANISM SECTION

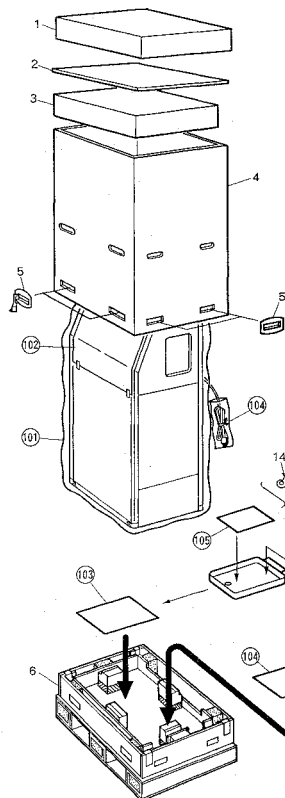
Parts List

Mark	No.	Part No.	Description
	1	CGDYX104M25	Semiconductive ceramic capacitor
	2	PEH1008	Drive spring
	3	PLA1004	Guide bar
	4	PNW1063	Carriage plate
	5	PXM1002	Motor
	6	PWY1009	Pickup assembly
	7	PMZ20P030FMC	Screw
	8	DXX1361	Spindle motor assembly
	9	PYY1025	Motor assembly
101			Motor pulley
102			Carriage M board



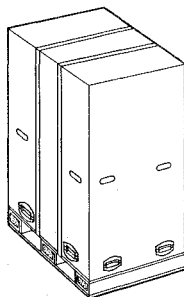
3. PACKING

3.1 MAIN SECTION



Parts List

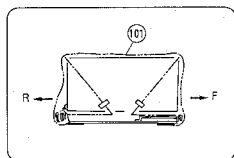
Mark	No.	Part No.	Description
	1	DHG1200	Packing cap
	2	SGK1366	Reinforced plate
	3	SHA1380	Pad assembly B
	4	DHG1252	Packing case
	5	AHG-204	PP joint
	6	SHA1413	Pad assembly A
	7		.....
	8	DRB1044	Operating instructions (English/French/German /Italian/Spanish)
	9	DEC1236	Menu number label
	10	DAH1442	Rate seal A
	11	DNH1335	Cover of the money storage
	12	DNF1255	Reinforced plate
	13	DAH1229	Coin sheet
	14	DNH1126	Lock release plate
	15	DXR1009	Remote control unit
	16		.....
	17	DBA1007	Screw
	101		Packing bag
	102		Packing sheet
	103		Vinyl bag
	104		Vinyl bag
	105		Vinyl bag
	106		Blind plate
	107		Cord clammer
	108		Cord clammer
	109		Battery UM-4



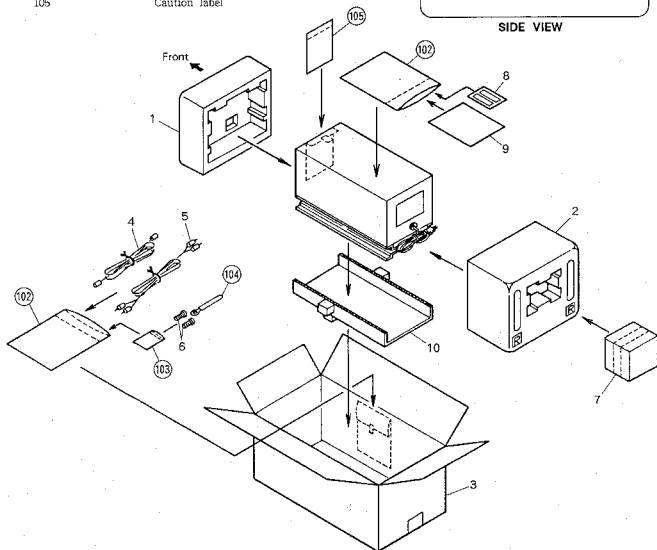
3.2 PACKING OF PD-MV55

Parts List

Mark	No.	Part No.	Description
	1	DHA1086	F pad
	2	DHA1087	R pad
	3	DHG1223	Packing case
	4	DDE1034	Connection cord
	5	FDE1085	Connection cord with pin plug
	6	AMZ40P080FMC	Screw
	7	DHG1164	Case
	8	DRW1156	Label B
	9	DRB1042	Operating instructions (English/French/German/Italian/Spanish)
	10	DHC1015	Reinforcement plate
	101		Packing sheet
	102		Vinyl bag
	103		Vinyl bag
	104		Cord clasper
	105		Caution label



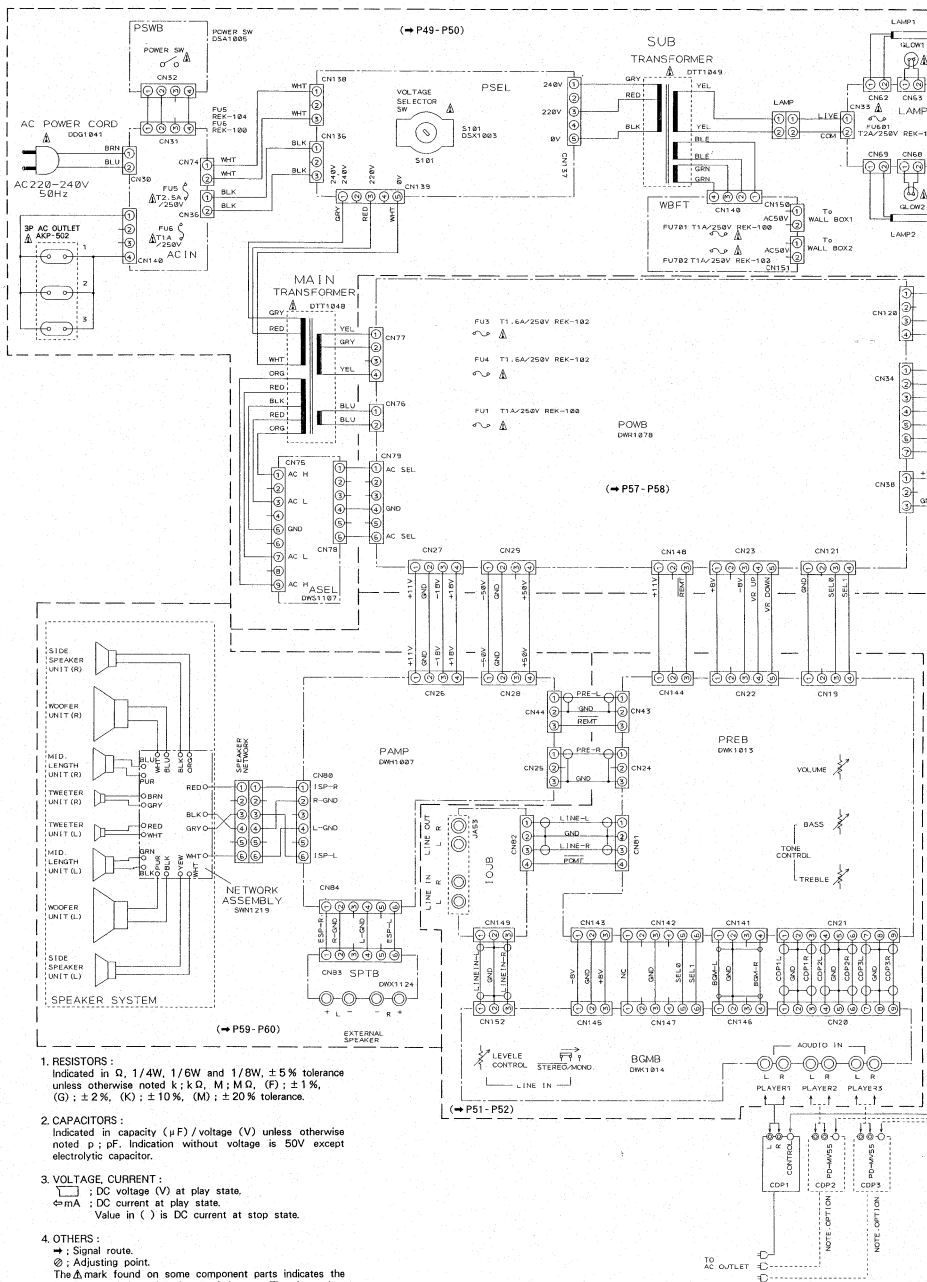
SIDE VIEW

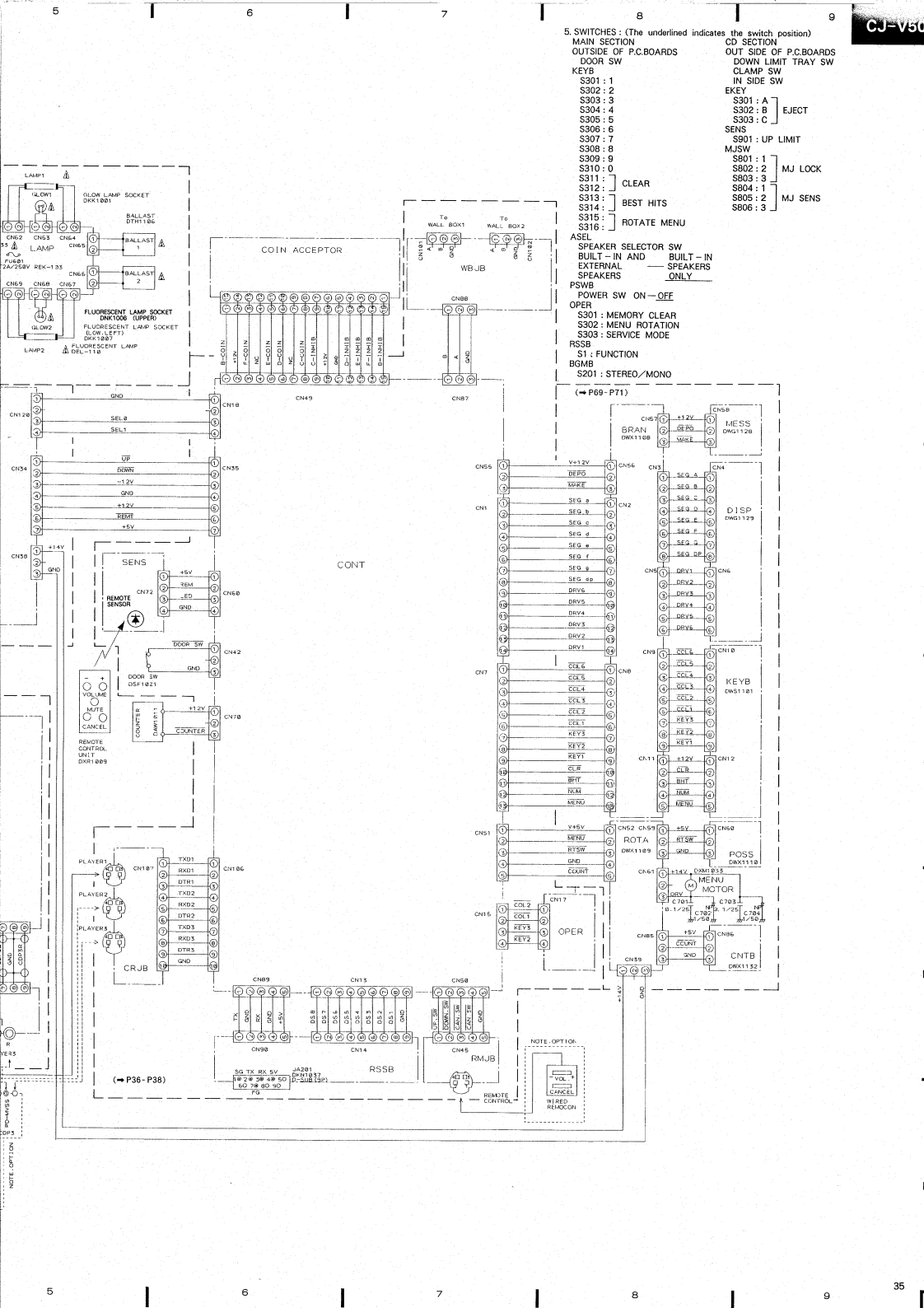


4. SCHEMATIC DIAGRAMS AND P.C. BOARDS PATTERN

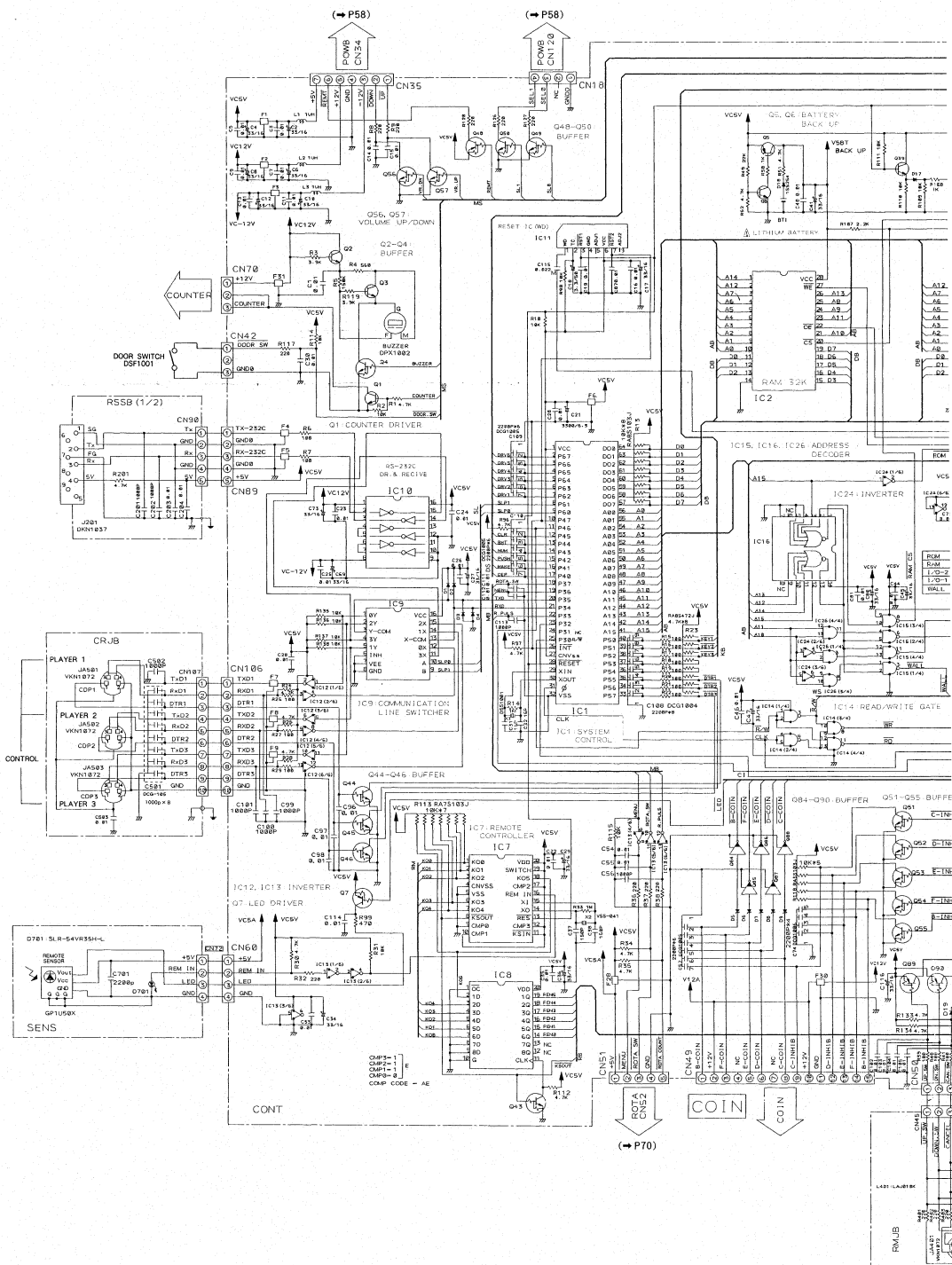
4.1 MAIN SECTION

4.1.1 OVERALL CONNECTION DIAGRAM





5



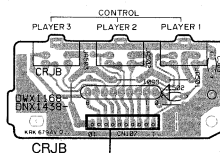
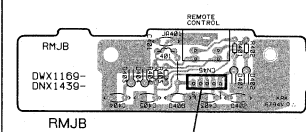
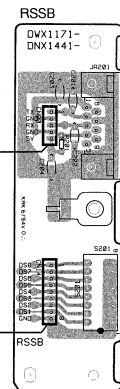
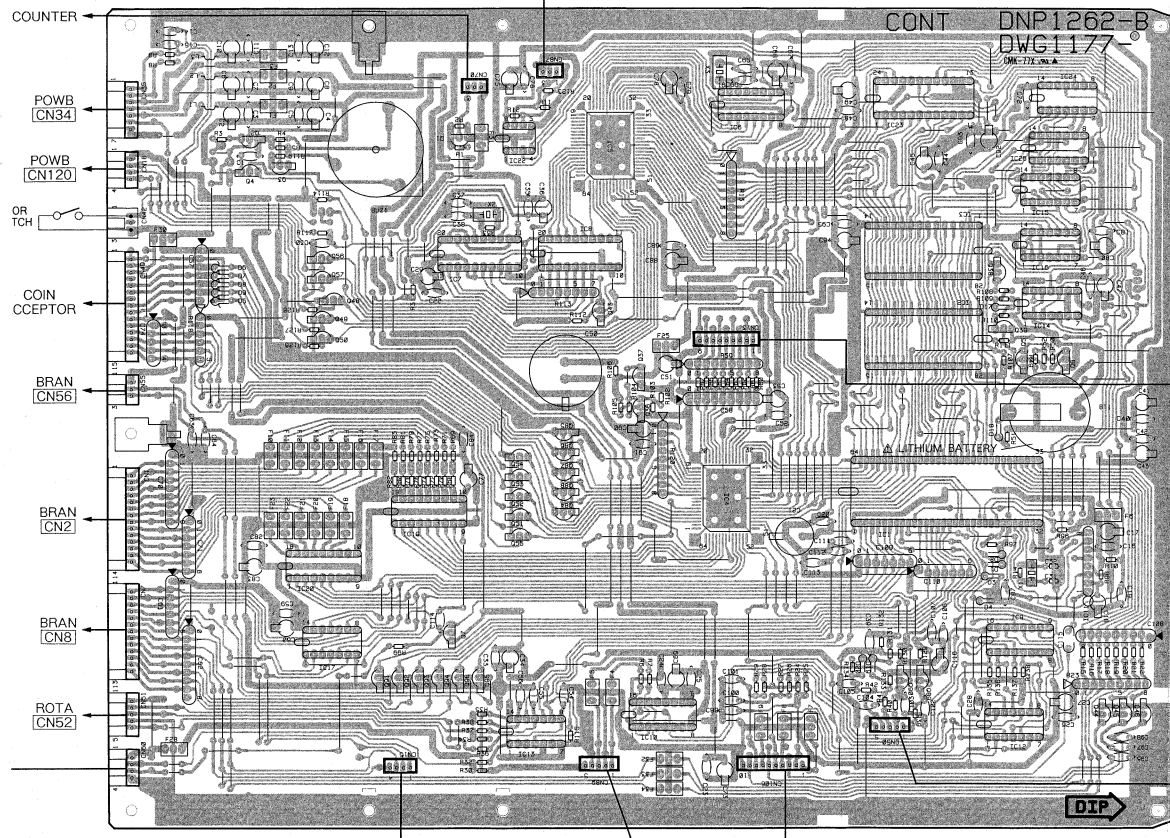


C

D

E

F



A

B

C

D

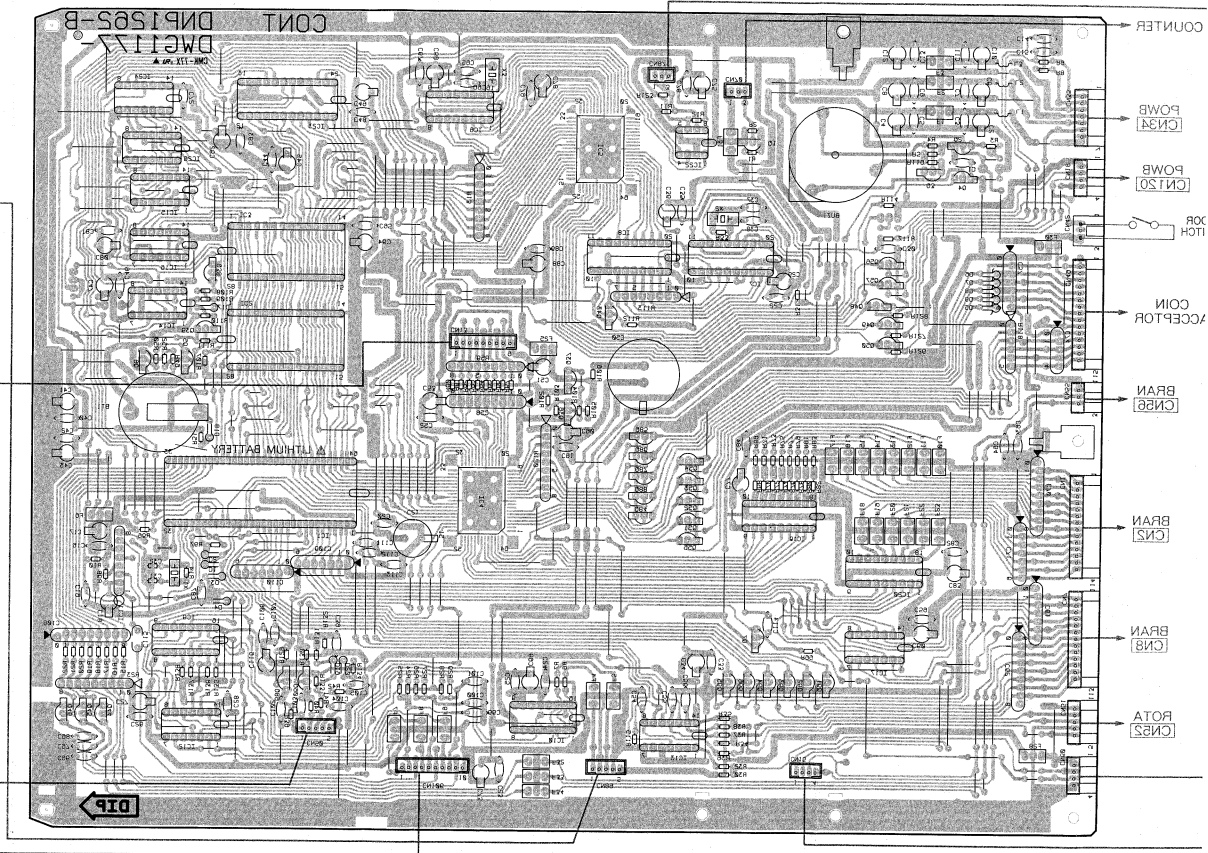
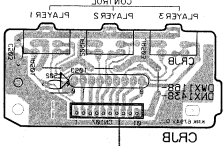
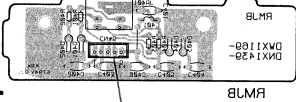
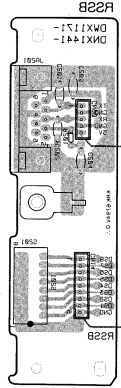
This P.C.B. connection diagram is viewed from the foil side.

A

B

C

D



CONT

COUNTER

POWER

POWER

COIN

ACCEPTOR

BRAIN

BRAIN

BRAIN

BRAIN

BRAIN

ROT

ROT

DIP

CONT DNP1585-B

CONT DNP1585-B

CONT DNP1585-B

CONT DNP1585-B

CONT DNP1585-B

CONT DNP1585-B

CONT DNP1585-B

CONT DNP1585-B

CONT DNP1585-B

CONT DNP1585-B

CONT DNP1585-B

CONT DNP1585-B

CONT DNP1585-B

CONT DNP1585-B

CONT DNP1585-B

CONT DNP1585-B

CONT DNP1585-B

CONT DNP1585-B

CONT DNP1585-B

CONT DNP1585-B

CONT DNP1585-B

CONT DNP1585-B

CONT DNP1585-B

CONT DNP1585-B

CONT DNP1585-B

CONT DNP1585-B

CONT DNP1585-B

CONT DNP1585-B

CONT DNP1585-B

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CONT DNP1585-B

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CONT DNP1585-B

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CONT DNP1585-B

CONT DNP1585-B

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CONT DNP1585-B

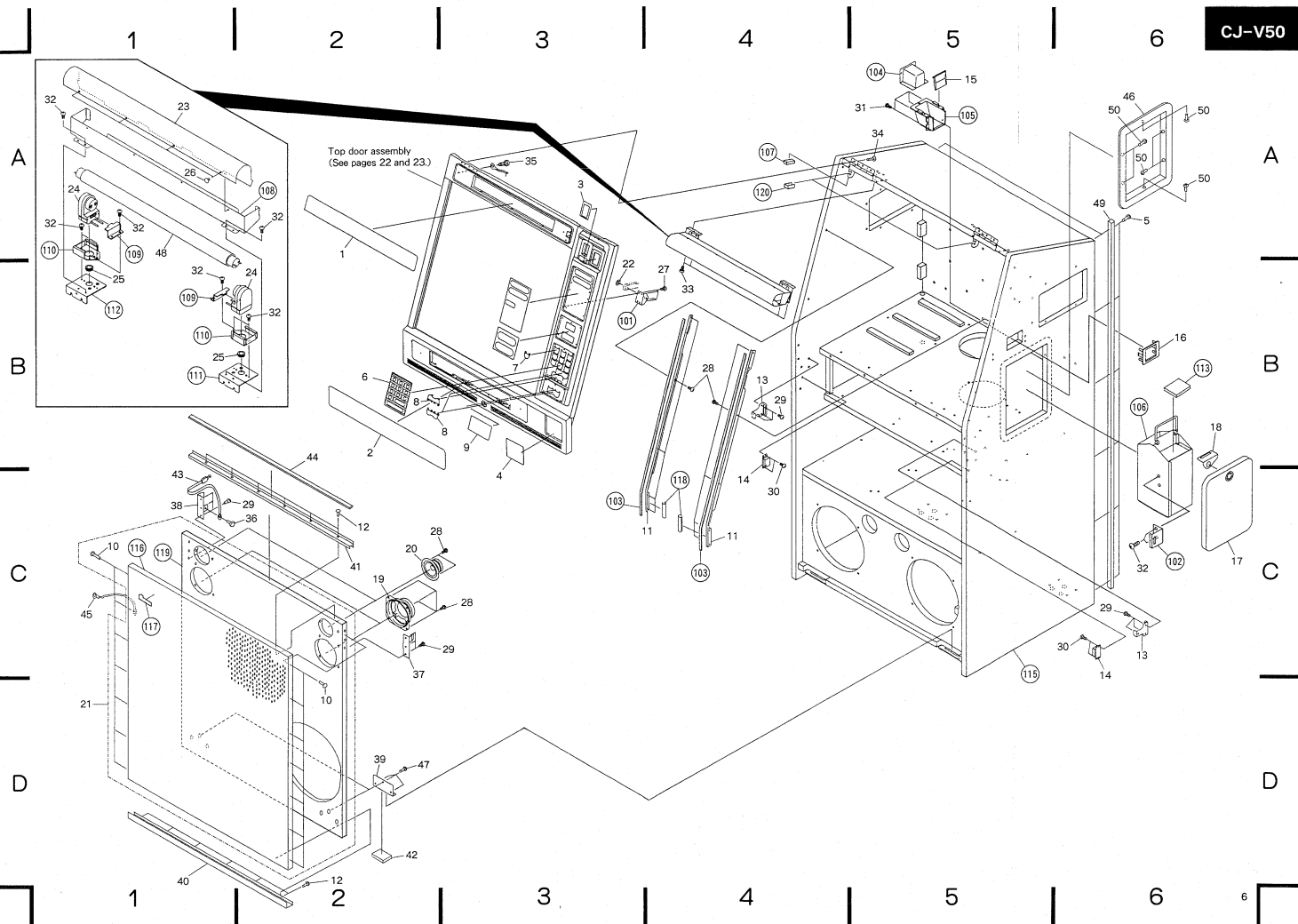
CONT DNP1585-B

CONT DNP1585-B

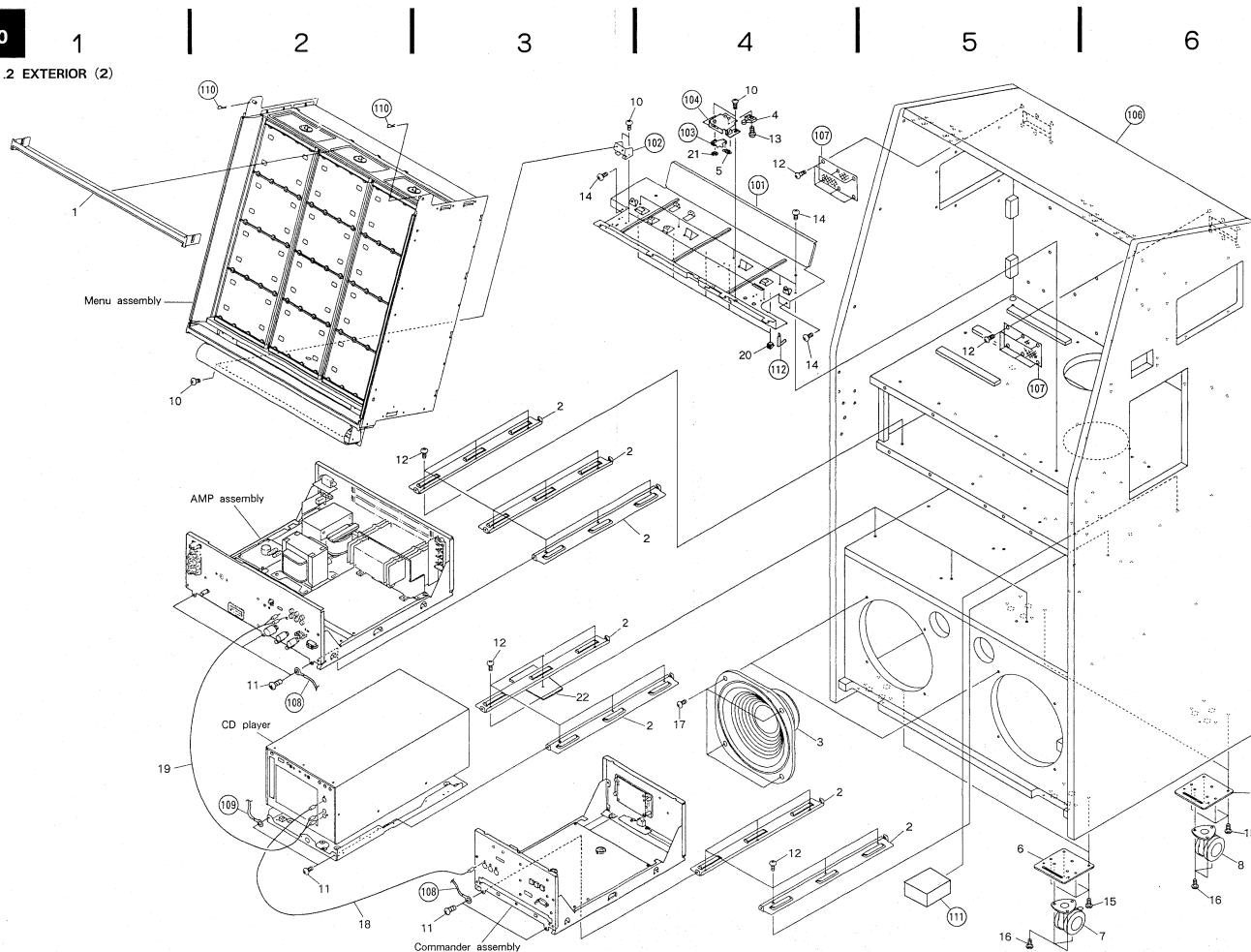
CONT DNP1585-B

CONT DNP1585-B

CONT DNP1585-B



2.1.2 EXTERIOR (2)

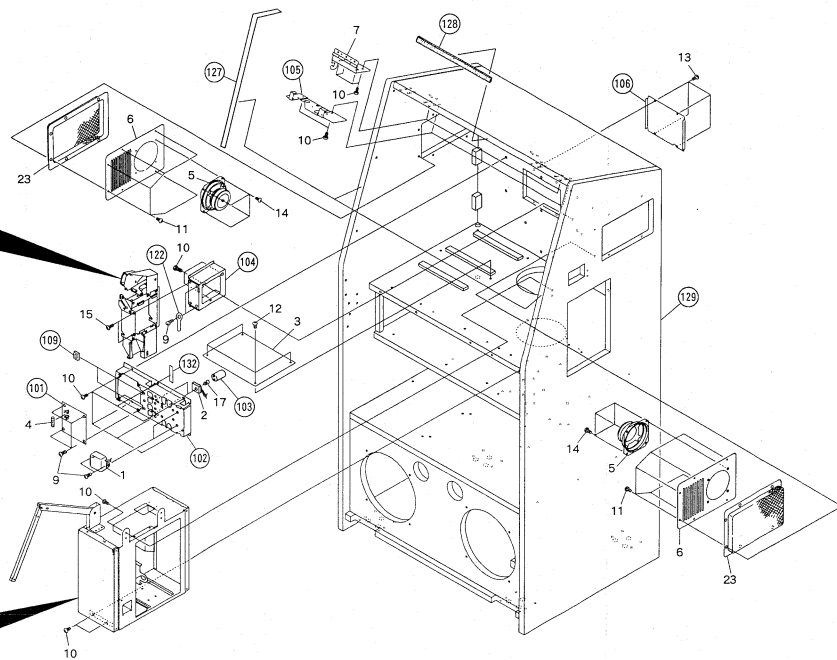
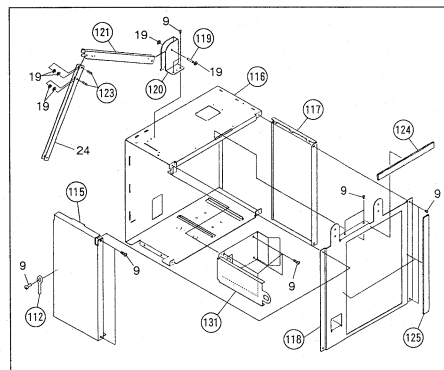
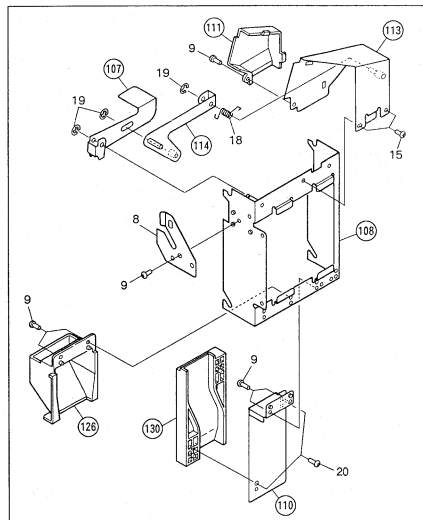


A

B

C

D



A

B

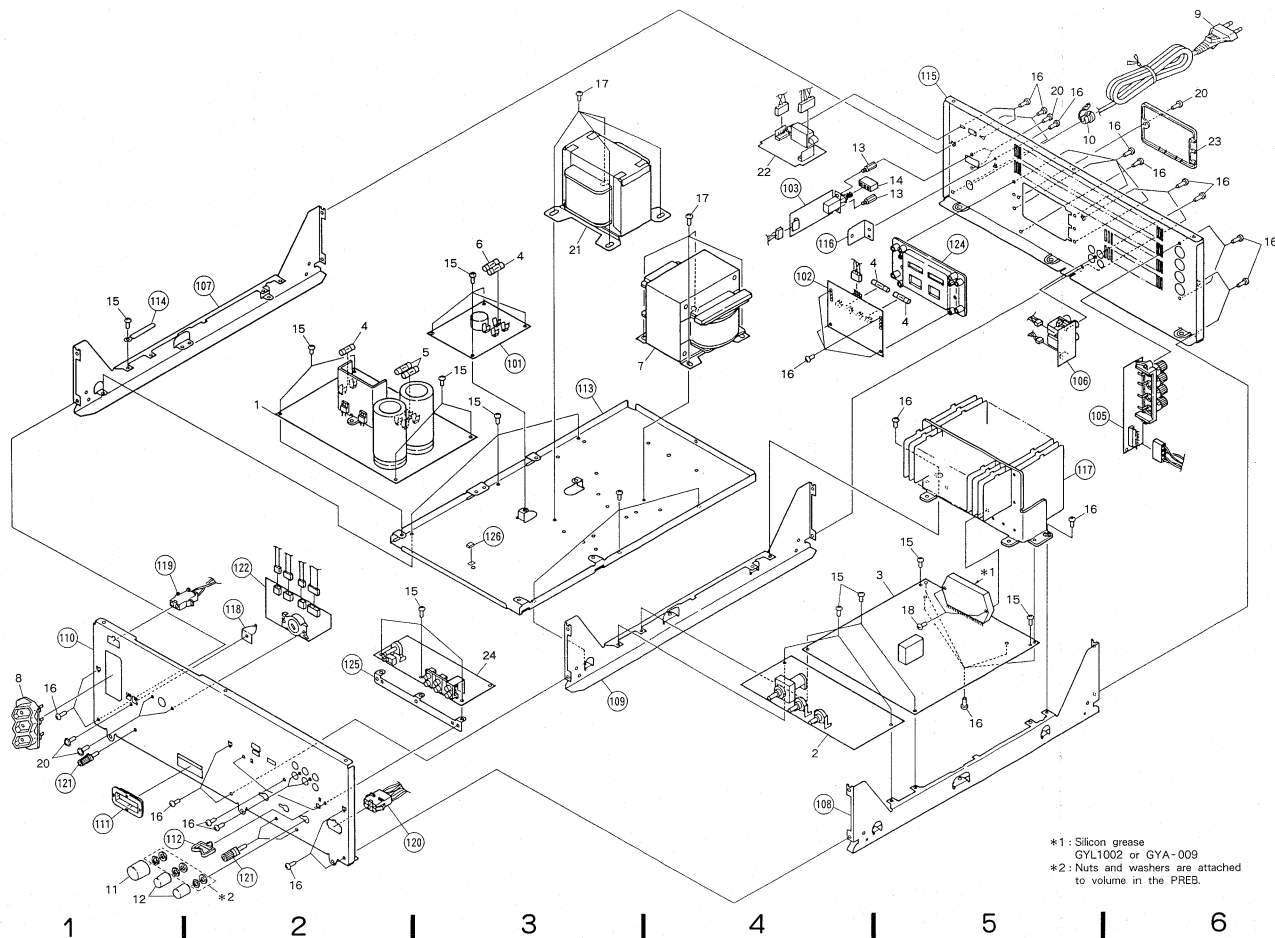
C

D

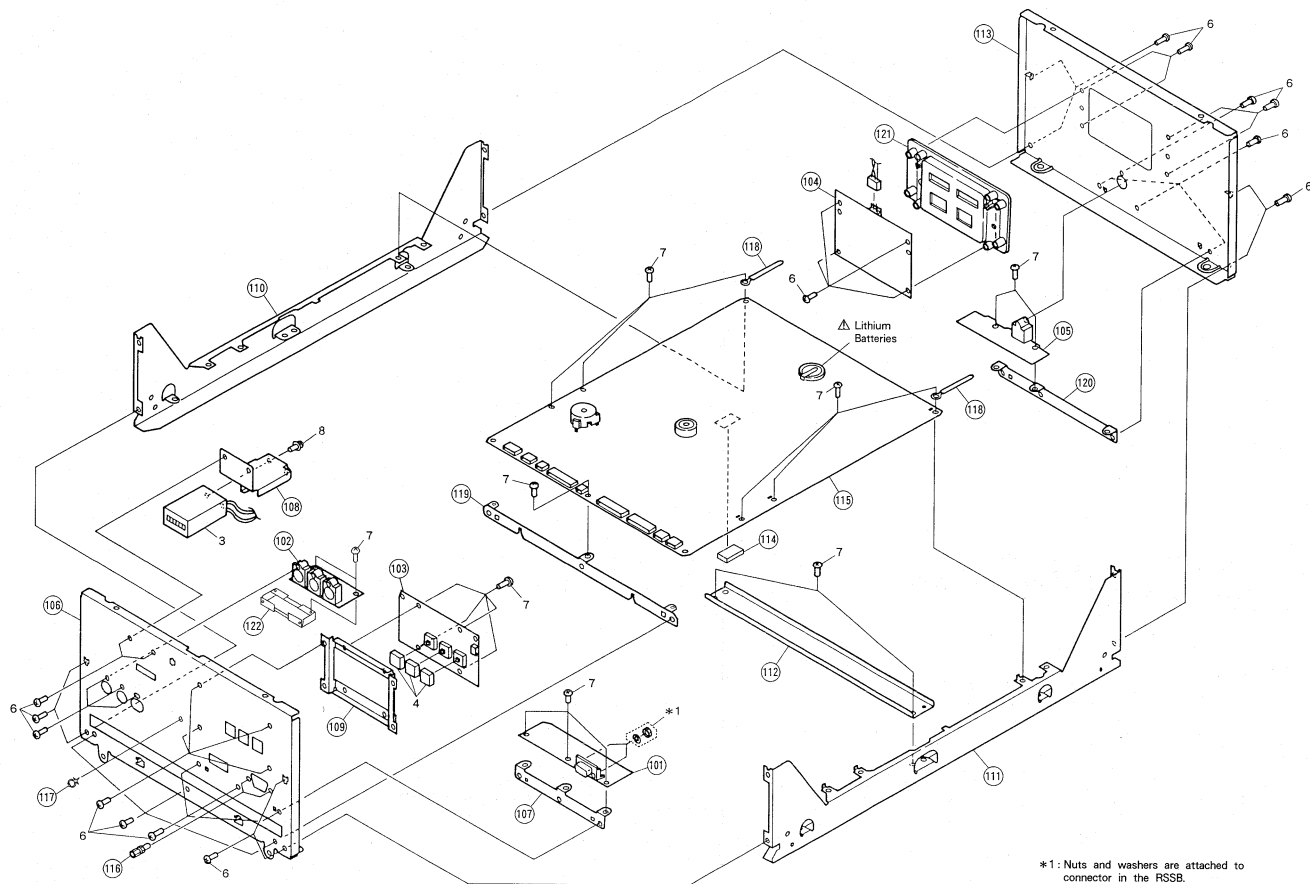
11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100	101	102	103	104	105	106	107	108	109	110	111	112	113	114	115	116	117	118	119	120	121	122	123	124	125	126	127	128	129	130	131	132	133	134	135	136	137	138	139	140	141	142	143	144	145	146	147	148	149	150	151	152	153	154	155	156	157	158	159	160	161	162	163	164	165	166	167	168	169	170	171	172	173	174	175	176	177	178	179	180	181	182	183	184	185	186	187	188	189	190	191	192	193	194	195	196	197	198	199	200	201	202	203	204	205	206	207	208	209	210	211	212	213	214	215	216	217	218	219	220	221	222	223	224	225	226	227	228	229	230	231	232	233	234	235	236	237	238	239	240	241	242	243	244	245	246	247	248	249	250	251	252	253	254	255	256	257	258	259	260	261	262	263	264	265	266	267	268	269	270	271	272	273	274	275	276	277	278	279	280	281	282	283	284	285	286	287	288	289	290	291	292	293	294	295	296	297	298	299	300	301	302	303	304	305	306	307	308	309	310	311	312	313	314	315	316	317	318	319	320	321	322	323	324	325	326	327	328	329	330	331	332	333	334	335	336	337	338	339	340	341	342	343	344	345	346	347	348	349	350	351	352	353	354	355	356	357	358	359	360	361	362	363	364	365	366	367	368	369	370	371	372	373	374	375	376	377	378	379	380	381	382	383	384	385	386	387	388	389	390	391	392	393	394	395	396	397	398	399	400	401	402	403	404	405	406	407	408	409	410	411	412	413	414	415	416	417	418	419	420	421	422	423	424	425	426	427	428	429	430	431	432	433	434	435	436	437	438	439	440	441	442	443	444	445	446	447	448	449	450	451	452	453	454	455	456	457	458	459	460	461	462	463	464	465	466	467	468	469	470	471	472	473	474
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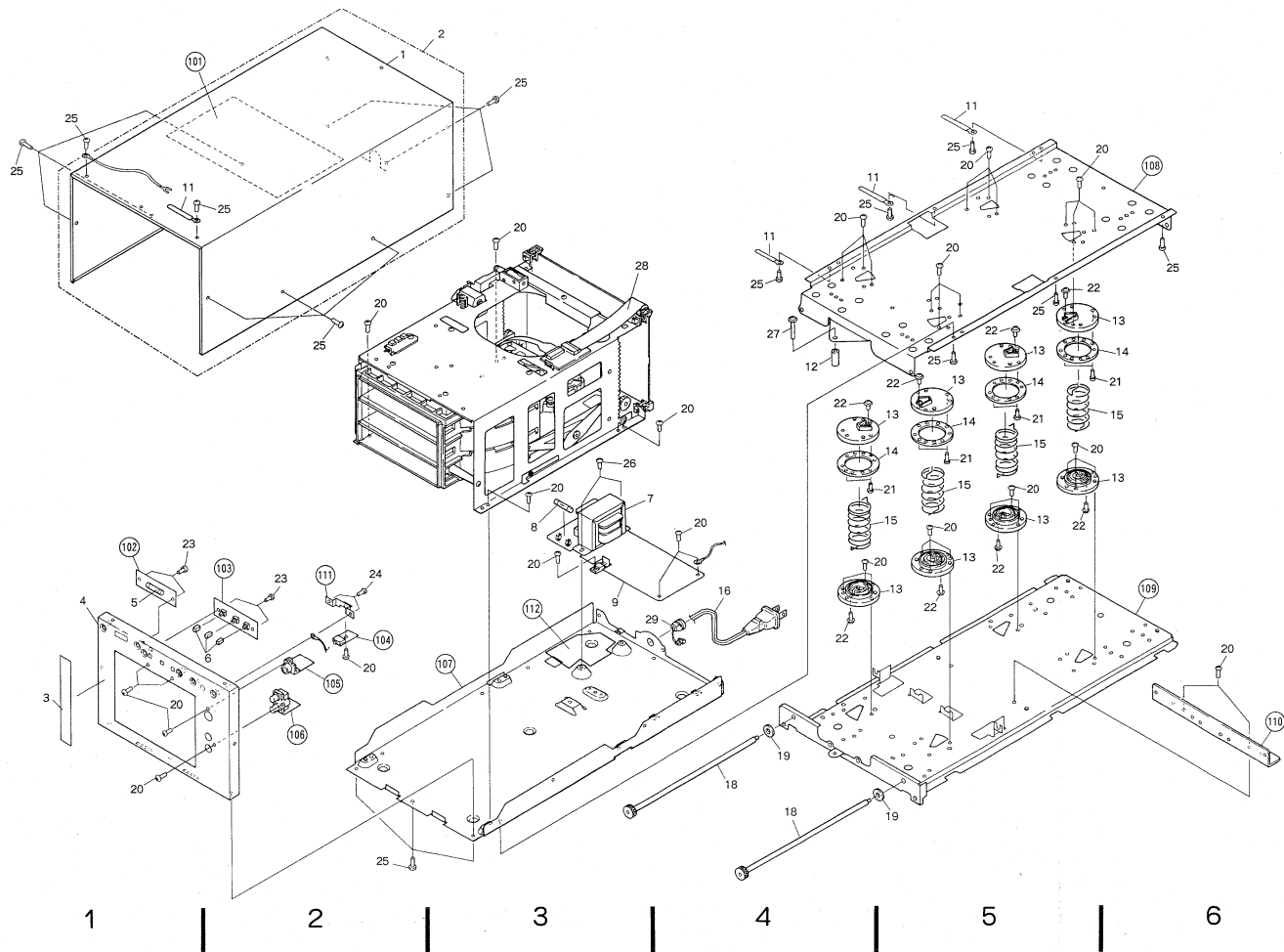


- 6



2.1.6 COMMANDER SECTION

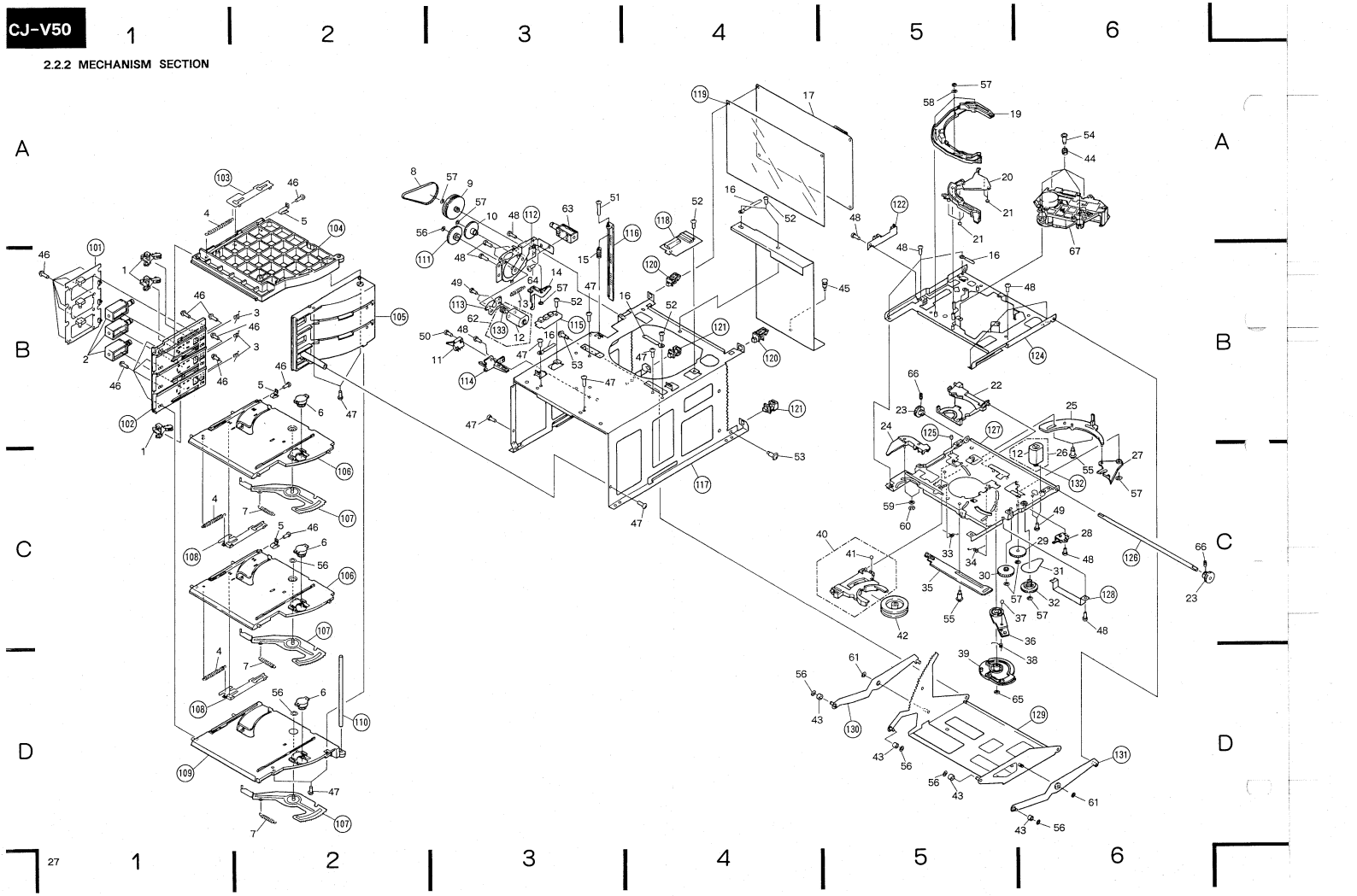




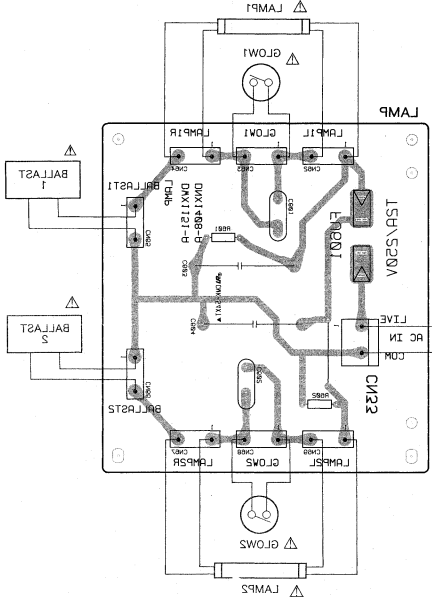
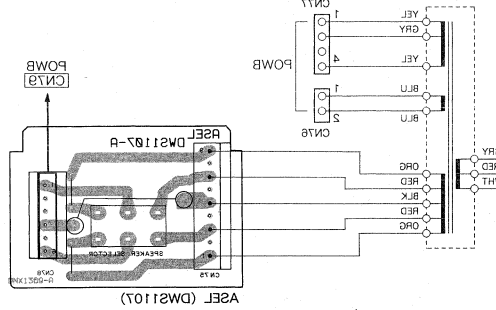
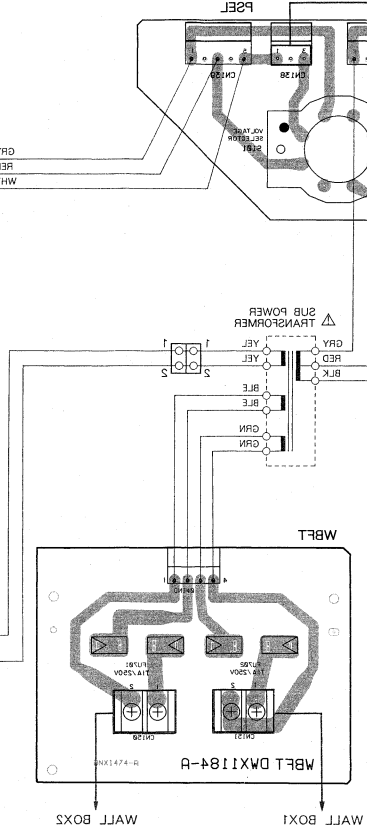
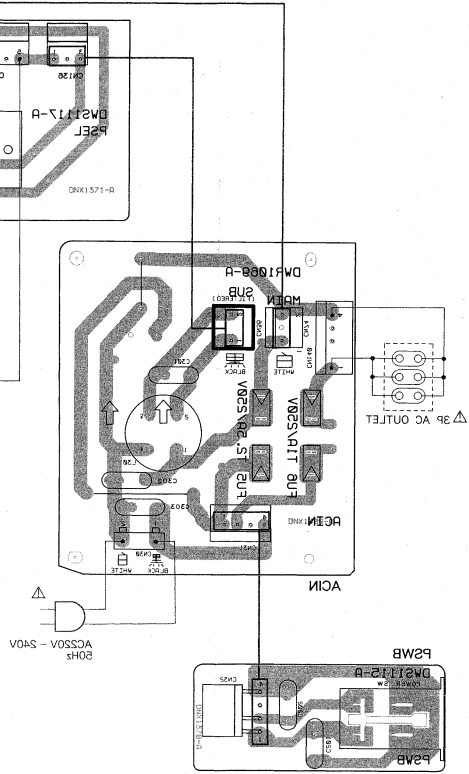
2.2.2 MECHANISM SECTION

A
B
C
D

A
B
C
D

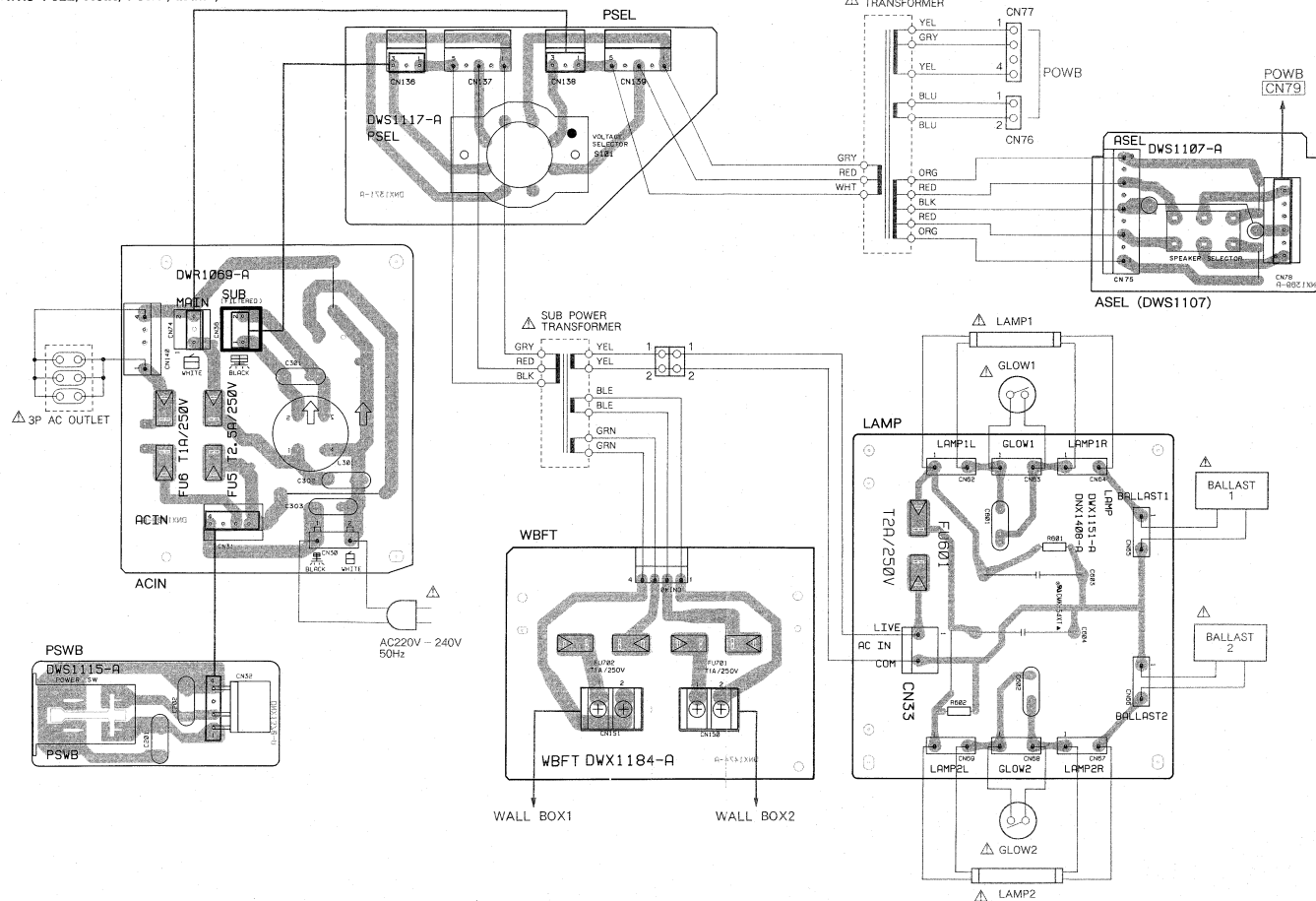


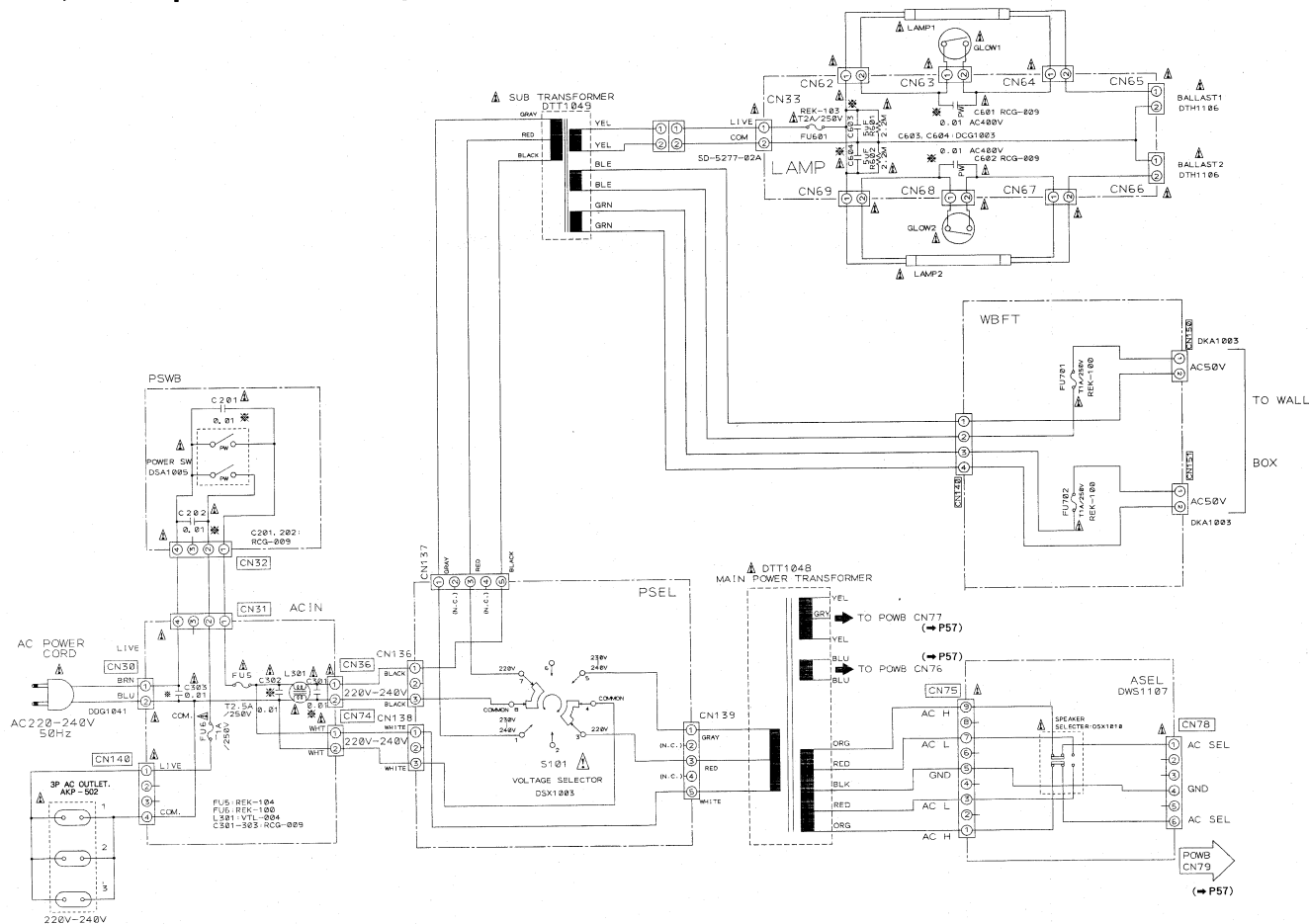
4.1.3 PSEL, ACIN, PSWB, LAMP, WBFL AND ASFL

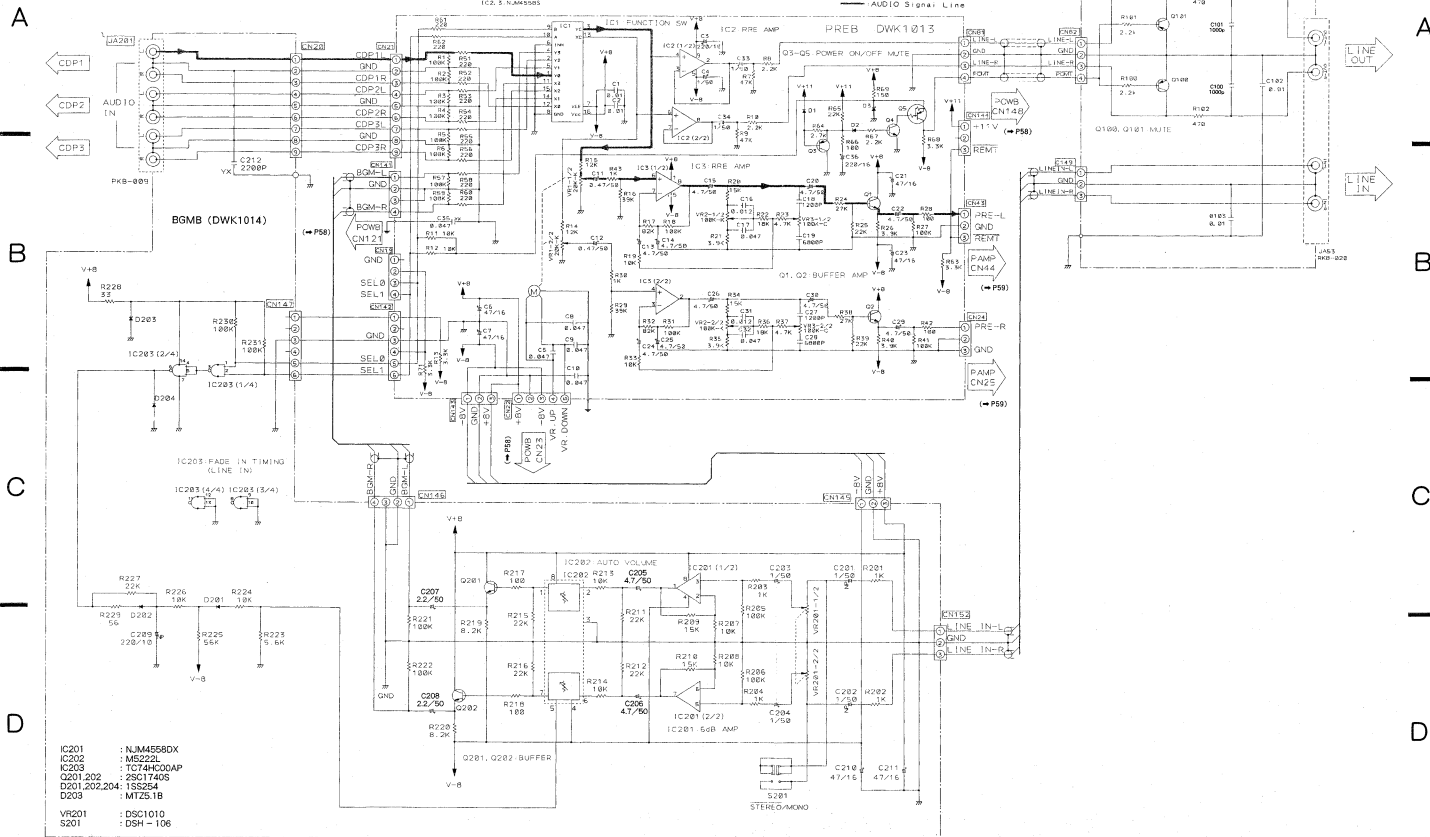


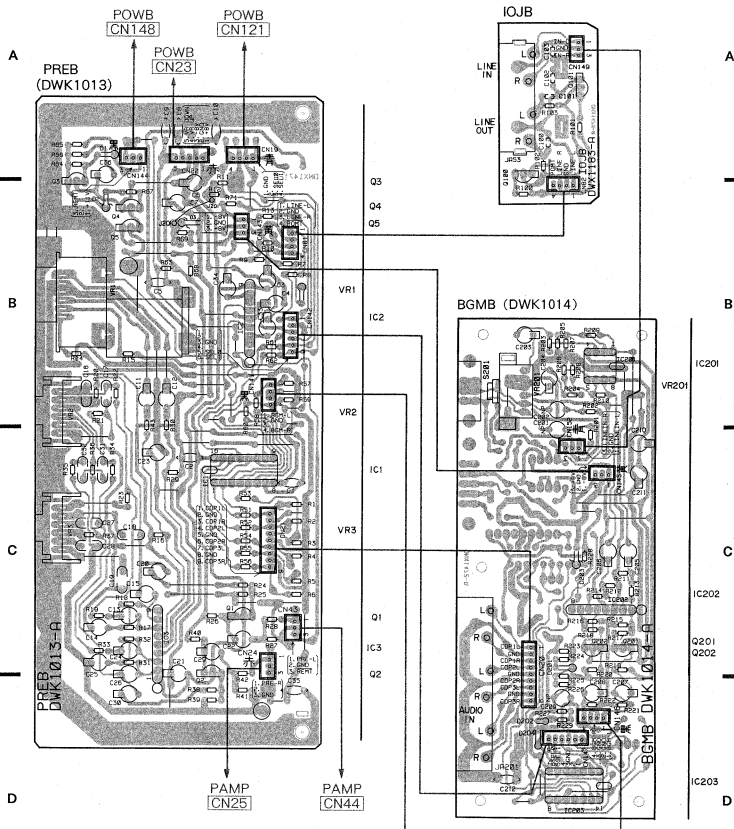
This P.C.B. connection diagram is viewed from the foil side.

4.1.3 PSEL, ACIN, PSWB, LAMP, WBFT AND ASEL

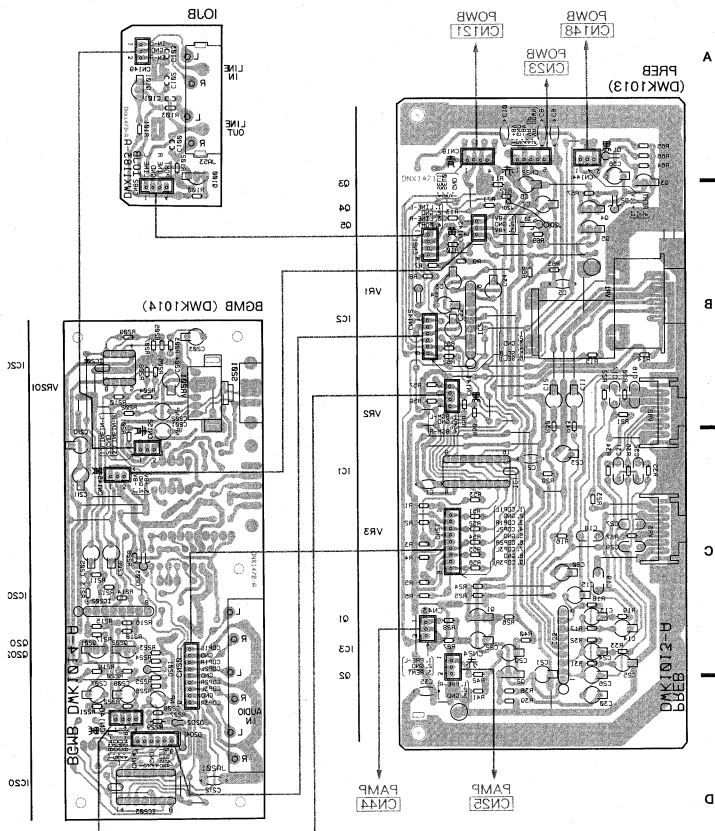




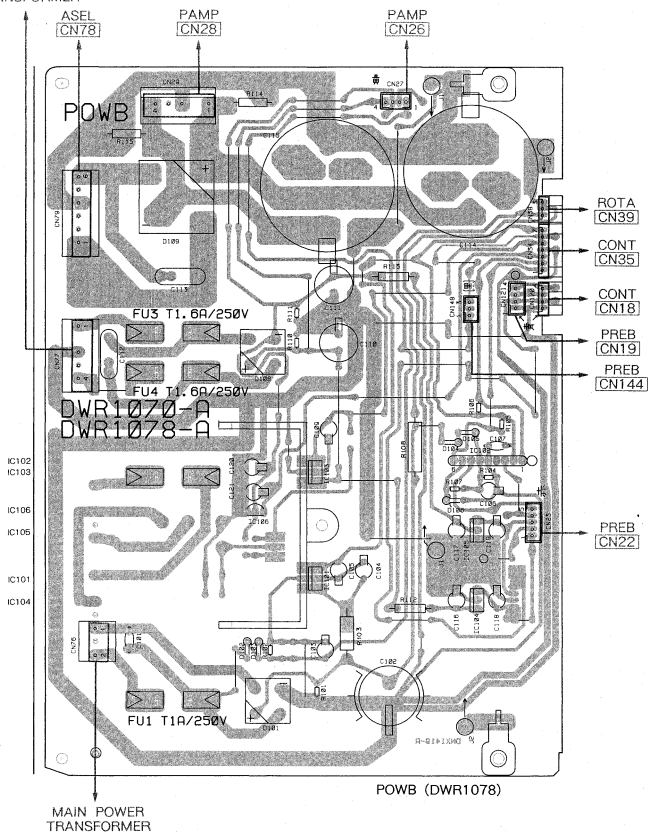




This P.C.B. connection diagram is viewed from the foil side.



4.1.5 POWB

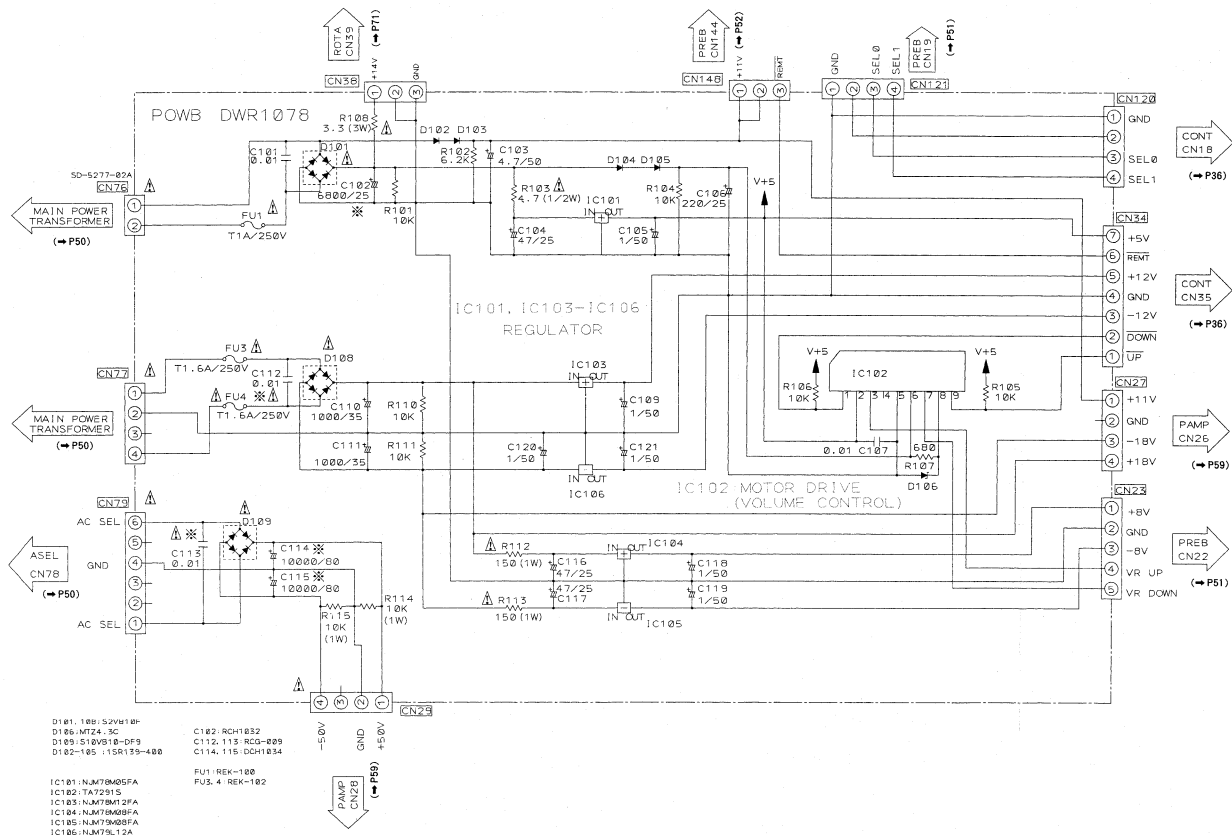
MAIN POWER
TRANSFORMER

A

B

C

D



↑

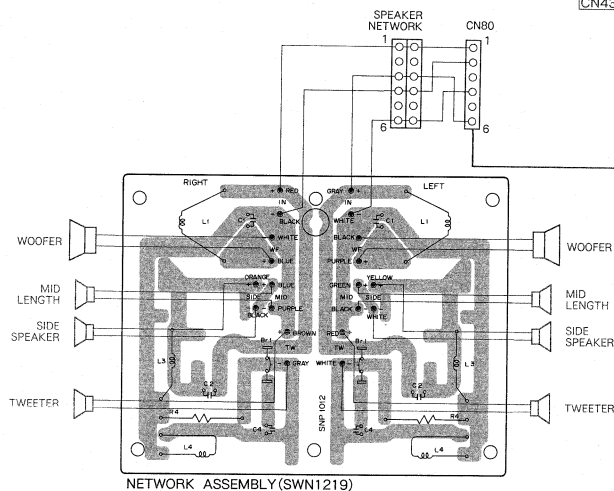


A

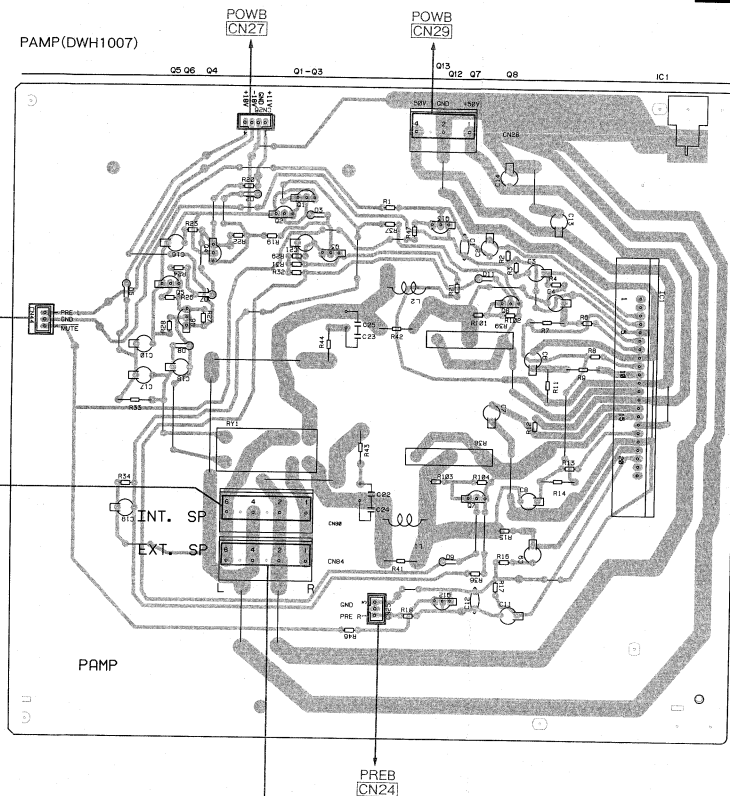
B

C

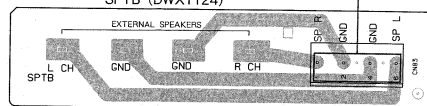
D

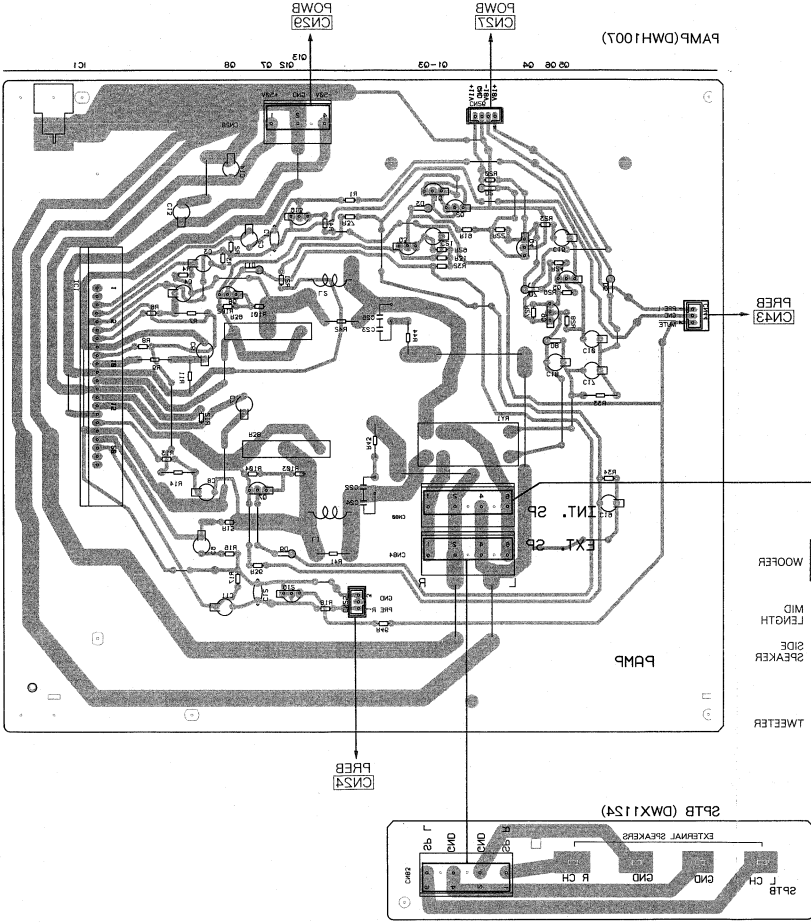
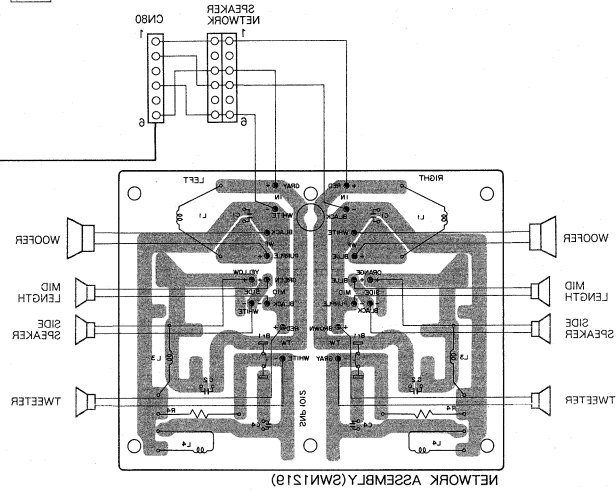


PAMP (DWH1007)



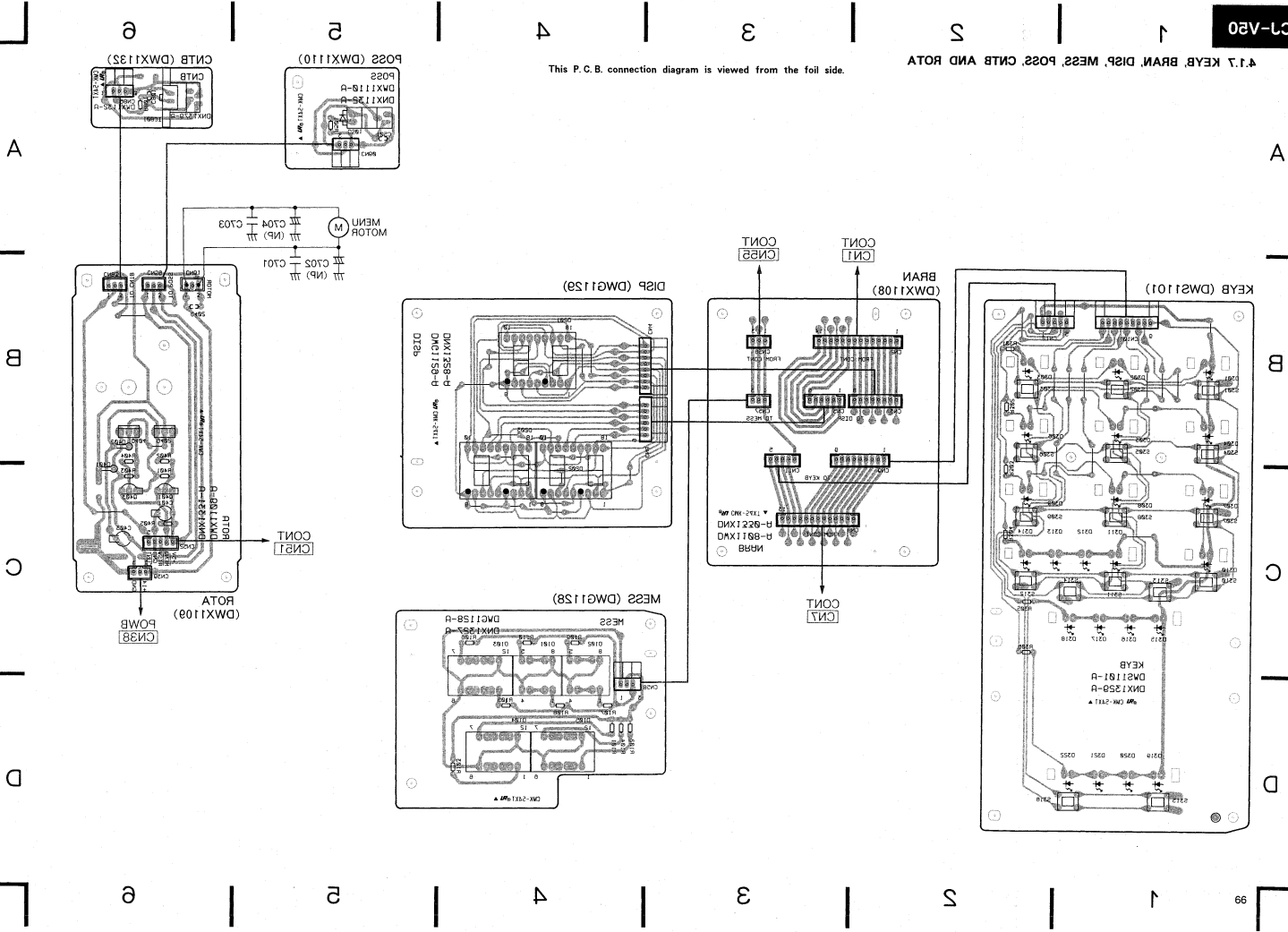
SPTB (DWH1124)





4.1.7 KEYB, BRAN, DISP, MESS, POSS, CNTB AND ROTA

This P.C.B. connection diagram is viewed from the foil side.



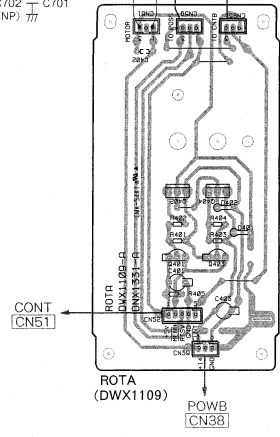
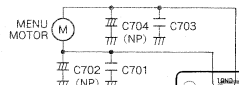
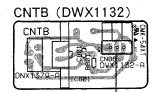
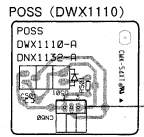
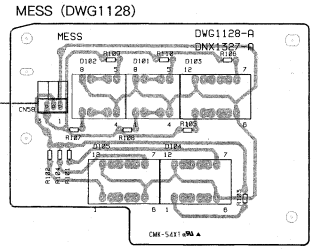
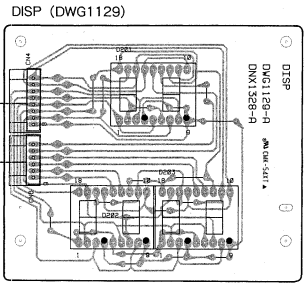
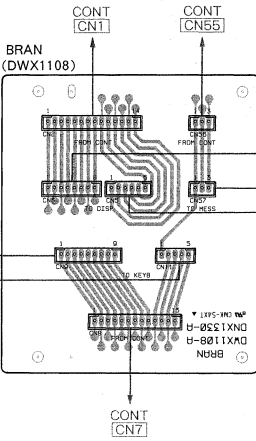
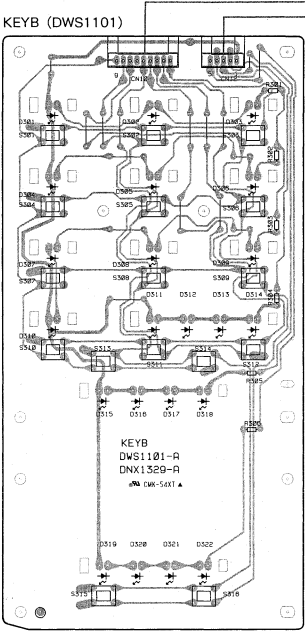
4.1.7 KEYB, BRAN, DISP, MESS, POSS, CNTB AND ROTA

A

B

C

D

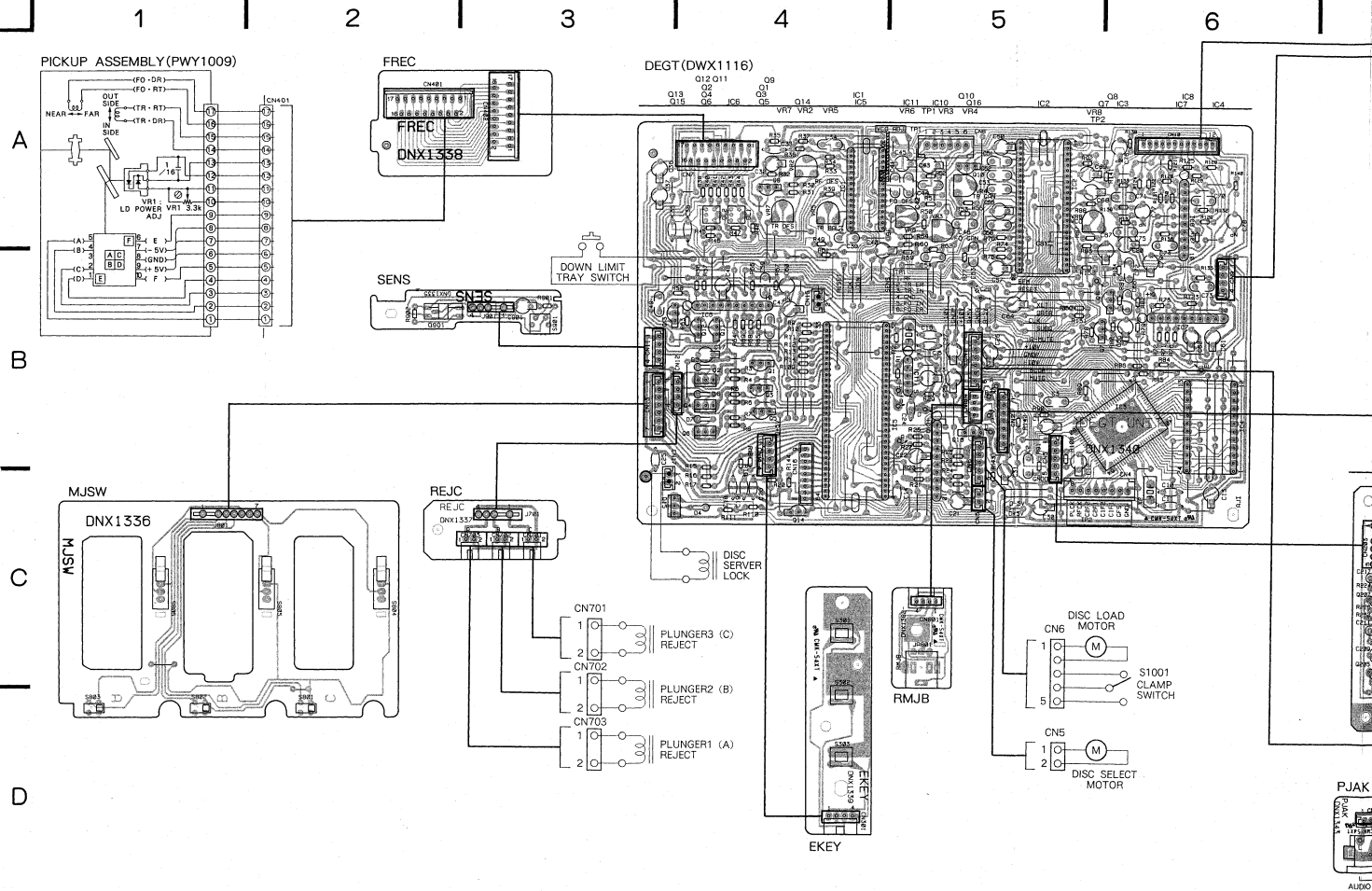


A

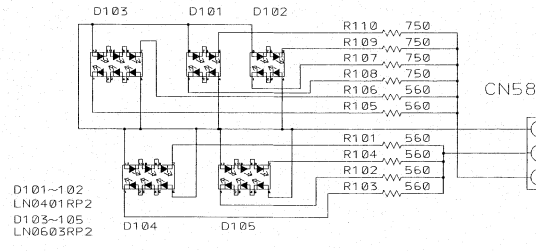
B

C

D

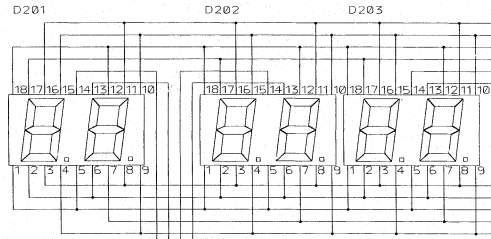


MESS DWG1128



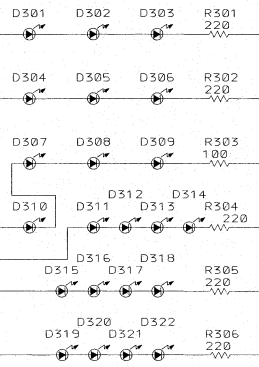
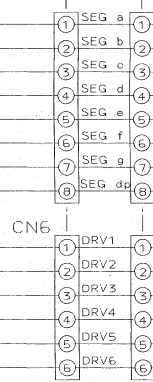
BRAN DWX1108

CN57 CN56



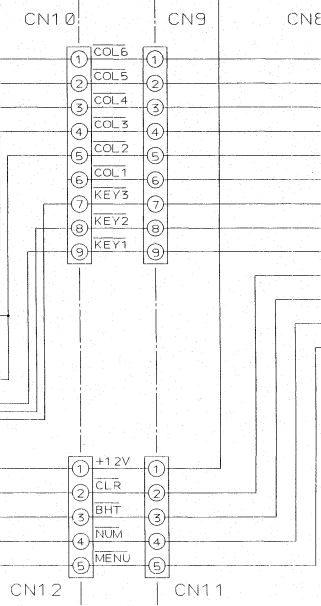
D201 LN526YA
 D202~203
 LN526RA (V)

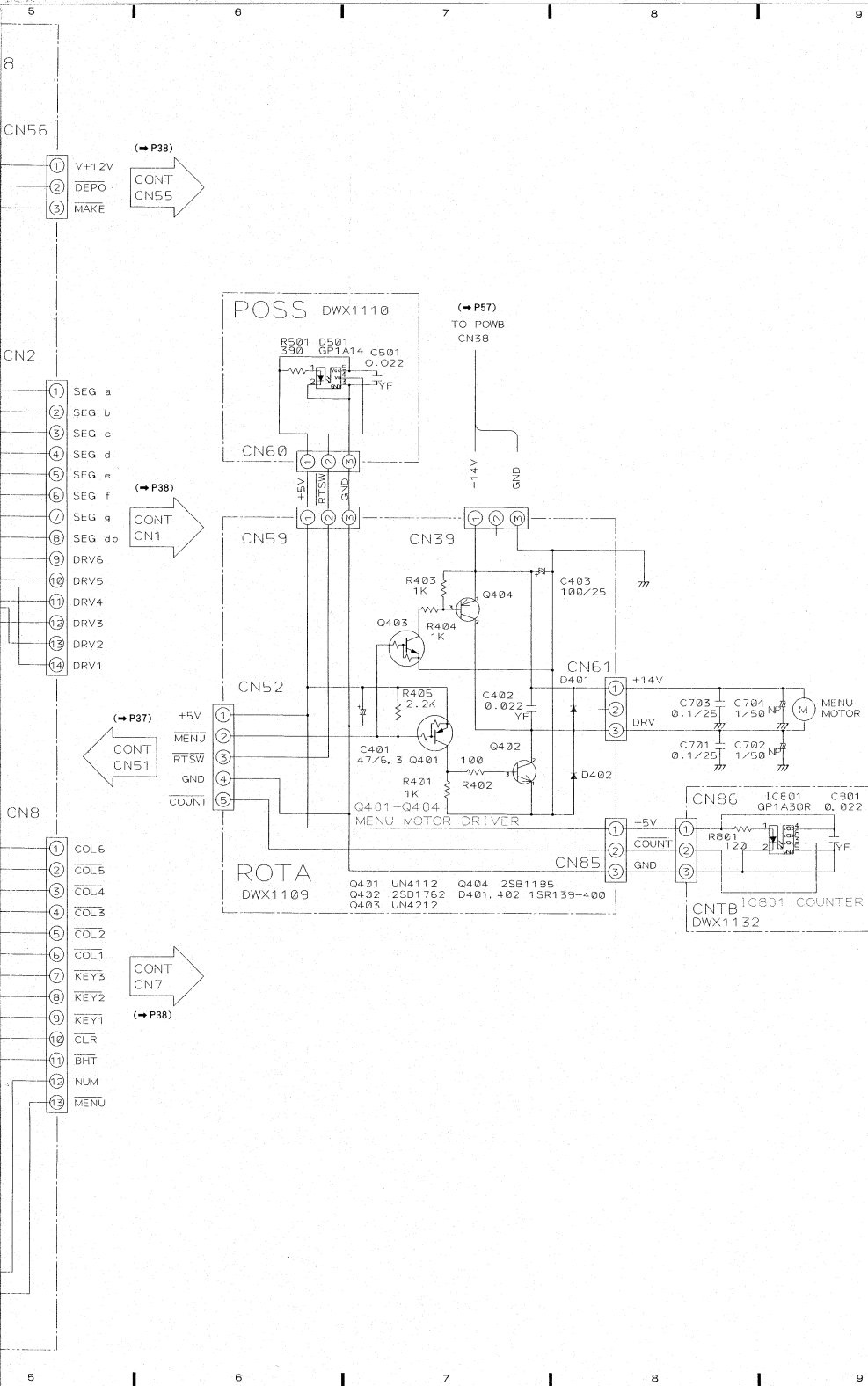
DISP DWG1129



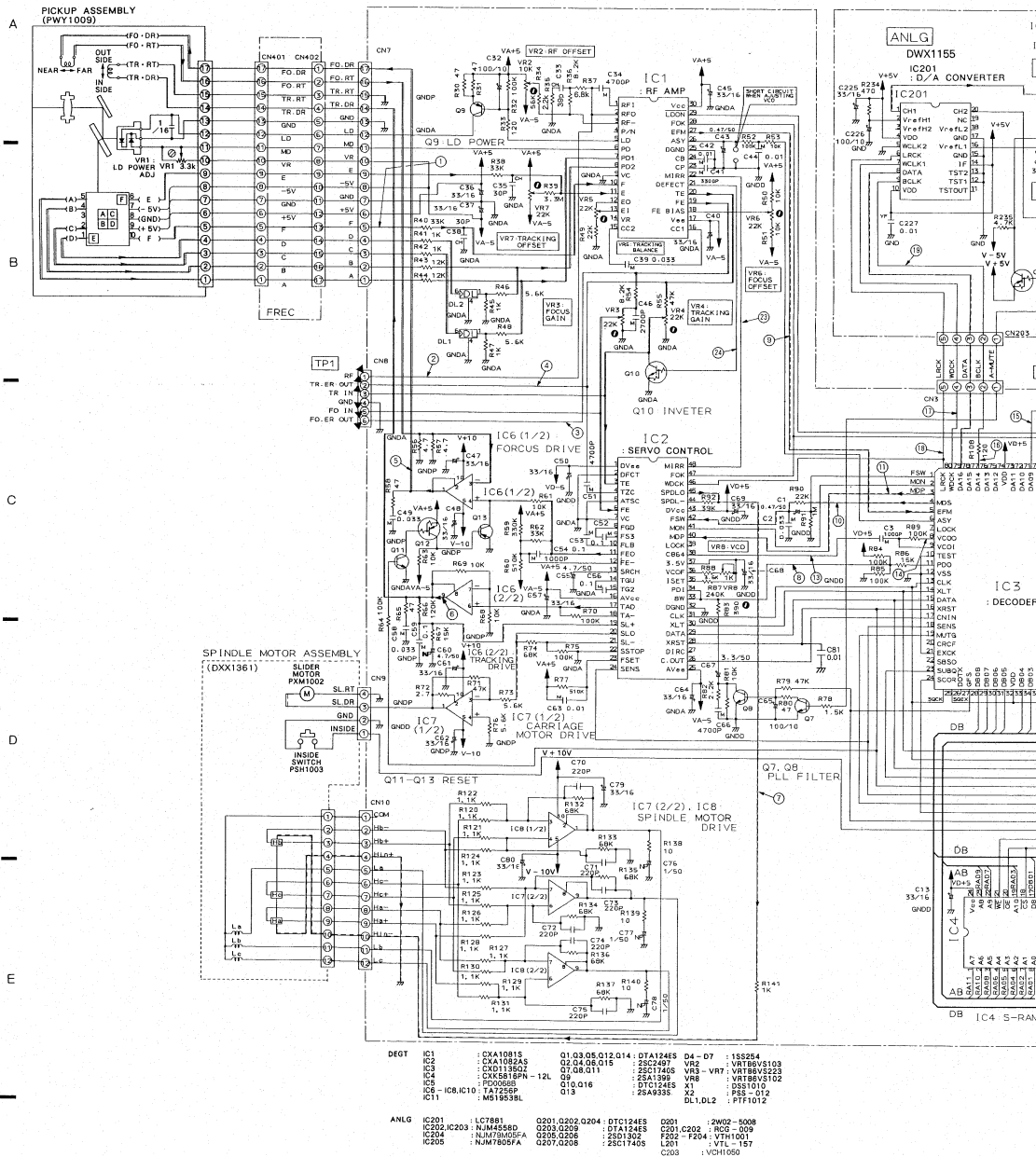
D301~310
 SLV-31MC3
 D311~314
 SLV-31DC3
 D315~322
 SLV-31YC3
 S301~310
 DSG1011
 S311~316
 RSG-155

KEYB DWS1101



A
B
C
D
E
F

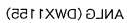
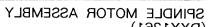
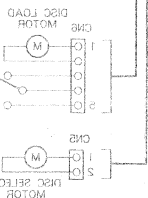
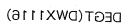
4.2 CD SECTION



DEGT	IC1	: CXA1081AS	01.03.05.012.014:	D7A124ES	D4 - 07	: 15525A
	IC2	: CXA1082AS	02.04.08.015:	25C2497	VR2	: VR6TBV6103
	IC3	: CXD113602	07.08.011	25C1740S	VX3 - VR7	: VR5TBV5223
	IC4	: CXC107PN-12L	08.01.016	25A1395	VR6	: VR6TBV6103
	IC5	: PD0066B	01.01.016	D7C124ES	X1	: D3S1010
	IC6	: MS1053BL	013	25A933S	D2	: P55 - 012
ICB,IC10:	TA7259P				XL1,OL2	: PF7102
	MS1053BL					
ANLG	IC201	: L7C87B1	Q201.Q202.Q204:	D7C124ES	Q201	: 2W02 - 5009
	IC202,IC203:	NJM4558D	Q201.Q202:	D7A124ES	Q201,Q202:	R2C - 808
	IC204	: NJM7805FA	Q205.Q206	25D1302	F202 - F204:	TH71001
	IC205	: NJM7805FA	Q207.Q208:	25C1740S	L201	: L201 - 57
					C203	: VCH1050



B

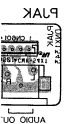
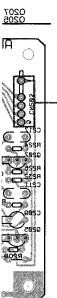
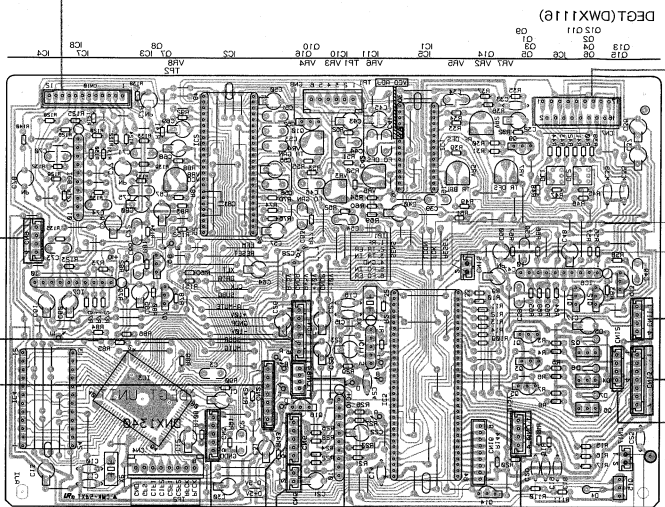
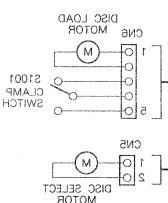
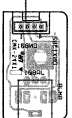
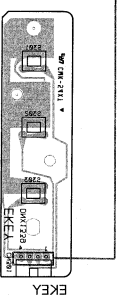
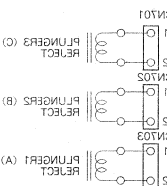
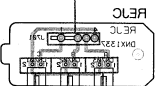
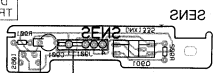
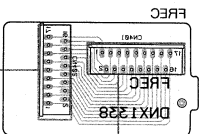
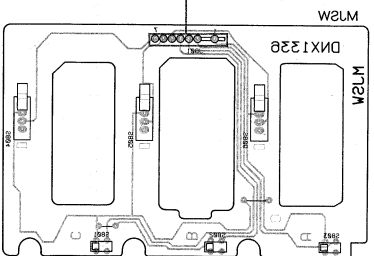
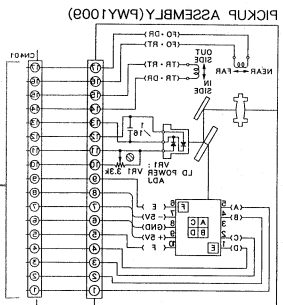


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B

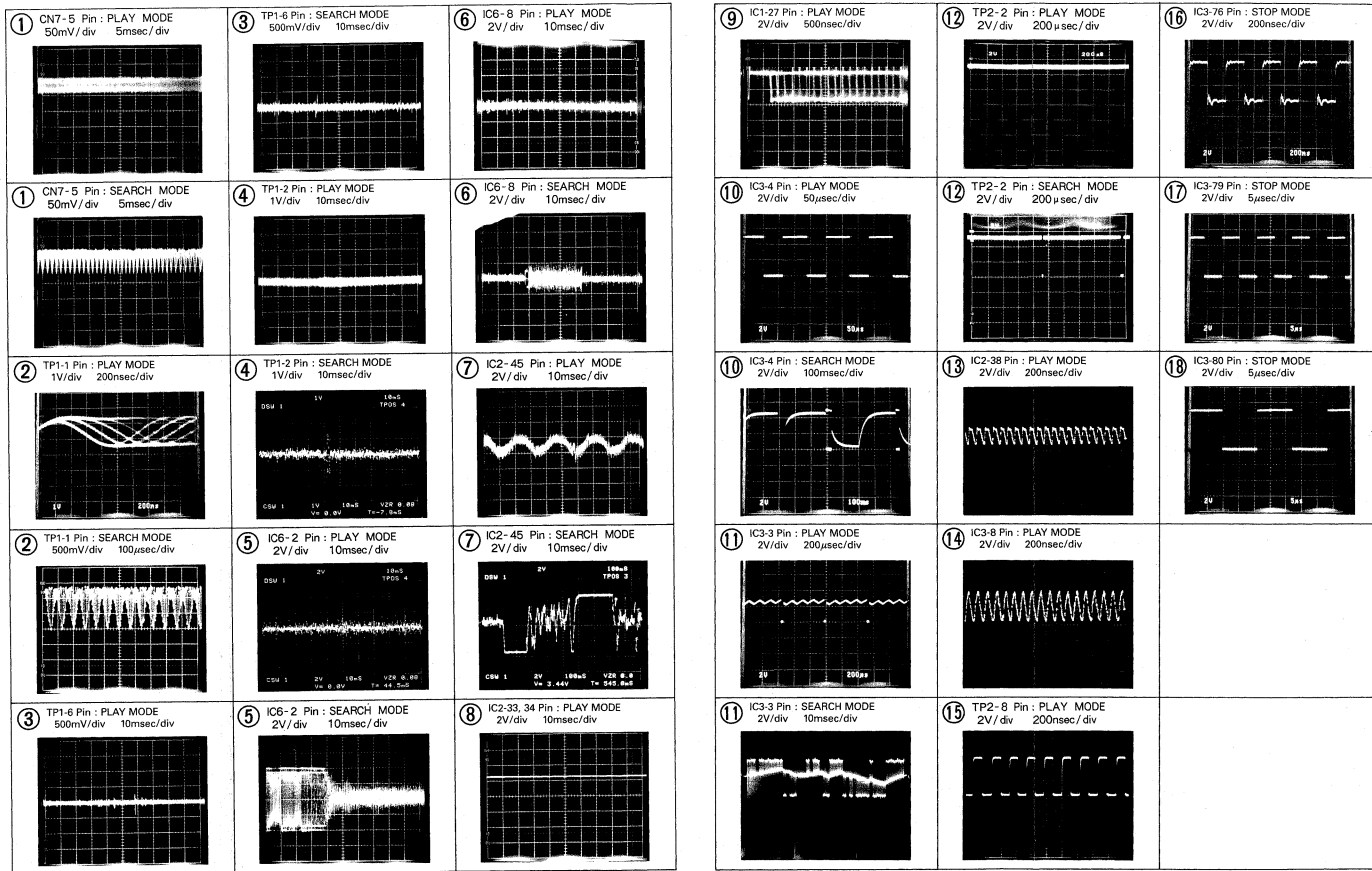
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D

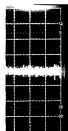
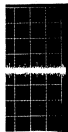
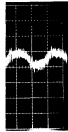
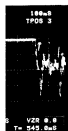
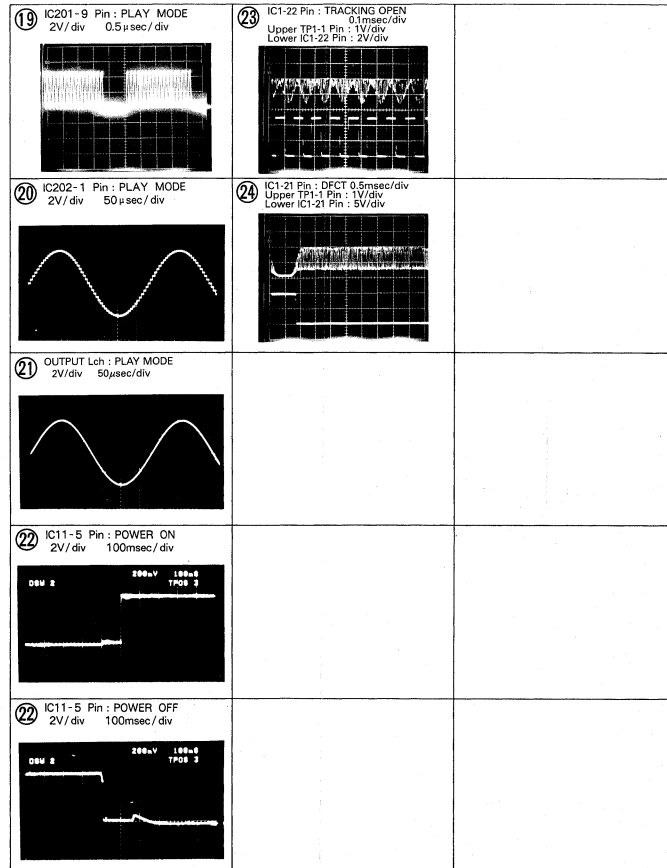
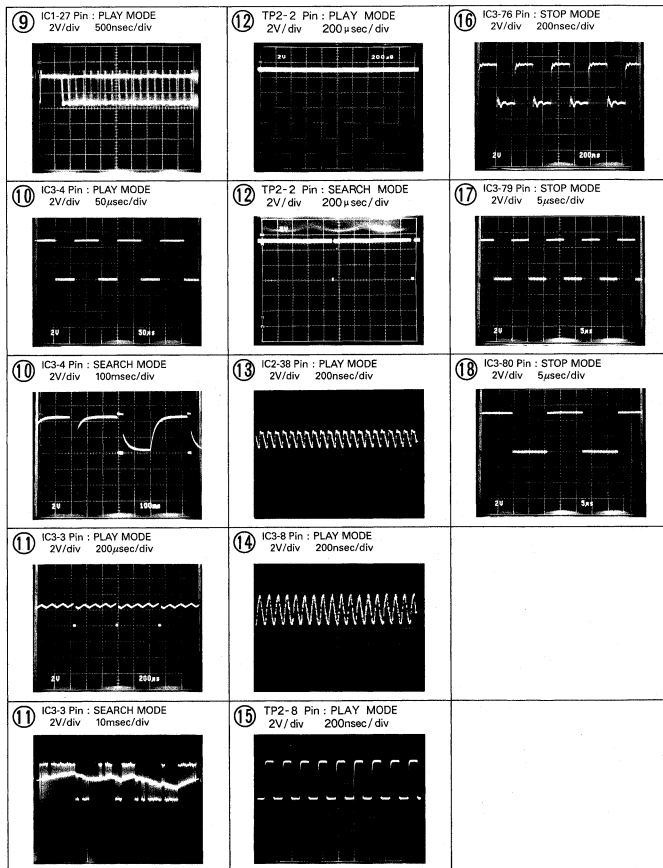
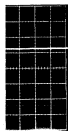


NOTE: The encircled numbers denote measuring points in the schematic diagram.

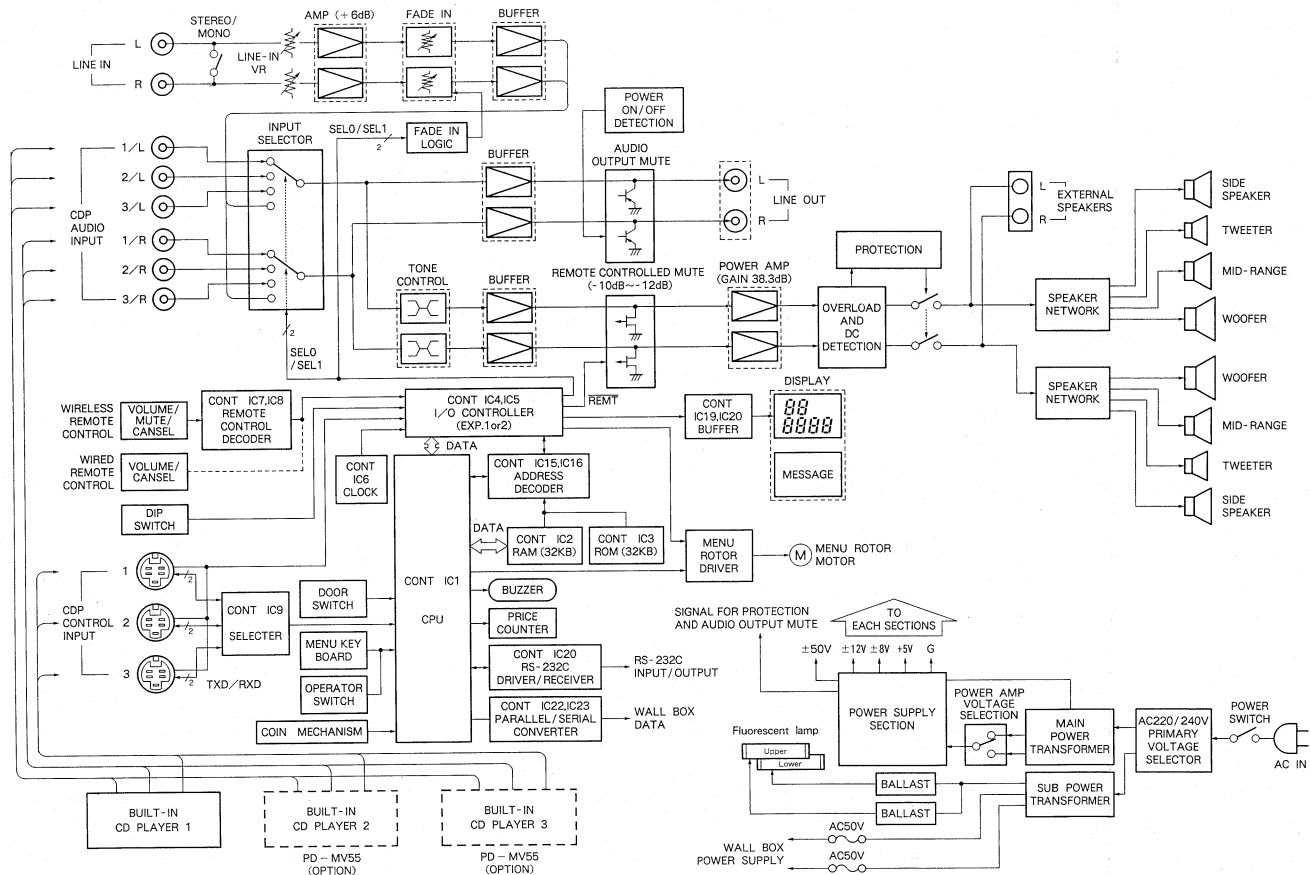
Wave Forms



suring points in the

MODE
/divH MODE
/divV MODE
/divCH MODE
/divY MODE
div

5. BLOCK DIAGRAM



6. P. C.

MAIN SE

NOTES :

- Parts witho
- Parts marke
- The Δ mark replacing, b
- When order

Ex.1 When
J = 5'
560 Ω
47k Ω
0.5 Ω
1 Ω
Ex.2 When
5.62k

Mark NO

CONT SEMICON

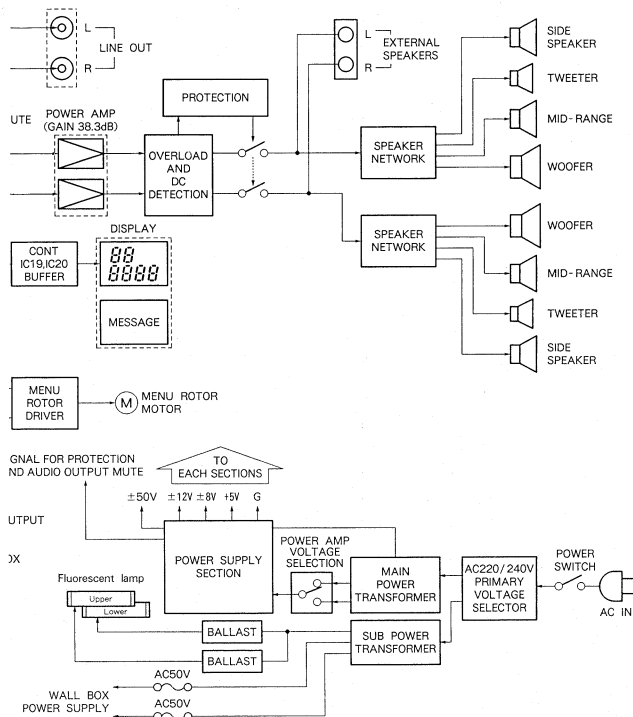
IC1
IC10
IC11
IC12
IC14
IC16
IC17
IC19
IC2
IC20
IC22
IC23
IC24
IC26
IC3
IC4
IC5
IC6
IC7
IC8
IC9
Q1
Q2, 3
Q35
Q37
Q38,
Q4
Q43-
Q48
Q49
Q5
Q50-
Q6
Q7
Q84-
Q89.

MAIN SECTION

NOTES :

- Ex.2 When there are 3 effective digits (such as in high precision metal film resistors)
 $5.62k\ \Omega \rightarrow 562 \times 10^1 \rightarrow 5621$ RN1/4SR5621F

Mark	NO	Description	Part NO.
	Q81-96		DTCA14E5
	D1	DIODE	ISS254
	D17-19	DIODE	ISS254
	D2, 20	DIODE	ISS254
	D3, 4	DIODE	ISS254
	D5-9	ZENER DIODE	MTZ5.1B
COILS AND FILTERS			
	L1	RADIAL INDUCTOR	1FA010K
	L2, 3	AXIAL INDUCTOR	LAU010K
	F1		VTH1001
	F10-19		VTH1001
	F2		VTH1001
	F20-23		VTH1001
	F25, 28		VTH1001
	F3		VTH1001
	F30-34		VTH1001
	F4-9		VTH1001
CAPACITORS			
	C1	CERAMIC CAPACITOR	CKCFY103Z50
	C10	ELECT. CAPACITOR	CEAS330M16
	C100, 101	CERAMIC CAPACITOR	CKCFY103Z50
	C102-107	CERAMIC CAPACITOR	CKCFY103Z50
	C108	CAPACITOR ARRAY	DCU1004
	C109	CAPACITOR ARRAY	DCU1005
	C110	CAPACITOR ARRAY	CKCFY103Z50
	C111, 112	CERAMIC CAPACITOR	CKCFY103Z50
	C113	CERAMIC CAPACITOR	CKCFY103Z50
	C114	CERAMIC CAPACITOR	CKCFY103Z50
	C115	MYLAR FILM CAPACITOR	QMA223.50
	C116, 12	ELECT. CAPACITOR	CEAS330M16
	C13-16	CERAMIC CAPACITOR	CKCFY103Z50
	C17	ELECT. CAPACITOR	CEAS330M16
	C18	ELECT. CAPACITOR	CEAS3R3M50
	C19	CERAMIC CAPACITOR	CKCFY103Z50
	C20	ELECT. CAPACITOR	CEAS330M16
	C21	CERAMIC CAPACITOR	CKCFY103Z50
	C21	ELECTROLYTIC CAPACIT	CEAS230M63



Mark	No.	Description	Part No.
C22-26		CERAMIC CAPACITOR	CKCYF103Z50
C27		ELECTR. CAPACITOR	CEAS330M16
C28		CERAMIC CAPACITOR	CKCYF103Z50
C35		ELECTR. CAPACITOR	CEAS330M16
C3, 30		CERAMIC CAPACITOR	CKCYF103Z50
C31, 32		CERAMIC CAPACITOR	CCCH150J50
C33		CERAMIC CAPACITOR	CKCYF103Z50
C34		ELECTR. CAPACITOR	CEAS330M16
C35		CERAMIC CAPACITOR	CKCYF103Z50
C36		ELECTR. CAPACITOR	CEAS330M16
C37, 38		CERAMIC CAPACITOR	CCCSL151J50
C39		CERAMIC CAPACITOR	CKCYF103Z50
C4		ELECTR. CAPACITOR	CEAS330M16
C40		CERAMIC CAPACITOR	CKCYF103Z50
C41		ELECTR. CAPACITOR	CEAS330M16
C42		CERAMIC CAPACITOR	CKCYF103Z50
C43		ELECTR. CAPACITOR	CEAS330M16
C44		CERAMIC CAPACITOR	CKCYF103Z50
C45		ELECTR. CAPACITOR	CEAS330M16
C46		CERAMIC CAPACITOR	CKCYF103Z50
C47		ELECTR. CAPACITOR	CEAS330M16
C48		CERAMIC CAPACITOR	CKCYF103Z50
C49		ELECTR. CAPACITOR	CEAS330M16
C5		CERAMIC CAPACITOR	CKCYF103Z50
C50		1F CAPACITOR	DGH1004
C51		ELECTR. CAPACITOR	CEAS4K7M50
C52		CERAMIC CAPACITOR	CKCYF103Z50
C53		ELECTR. CAPACITOR	CEAS330M16
C54, 55		CERAMIC CAPACITOR	CKCYF103Z50
C56		CERAMIC CAPACITOR	CKCYF102Z50
C57		CAPACITOR ARRAY	DG1005
C58		CAPACITOR ARRAY	DG1004
C59		CERAMIC CAPACITOR	CKCYF103Z50
C6, 60		ELECTR. CAPACITOR	CEAS330M16
C61		CAPACITOR ARRAY	DG1005
C62		CAPACITOR ARRAY	DG1004
C63, 64		CERAMIC CAPACITOR	CKCYF103Z50
C65, 66		CERAMIC CAPACITOR	CCCH100D50
C67		CERAMIC CAPACITOR	CKCYF103Z50
C68, 69		ELECTR. CAPACITOR	CEAS330M16
C7		CERAMIC CAPACITOR	CKCYF103Z50
C70		CAPACITOR ARRAY	DG1004
C71		CAPACITOR ARRAY	DG1005
C72		CERAMIC CAPACITOR	CKCYF103Z50
C73		ELECTR. CAPACITOR	CEAS330M16
C74		CAPACITOR ARRAY	DG1006
C75		ELECTR. CAPACITOR	CEAS330M16
C76		CERAMIC CAPACITOR	CKCYF103Z50
C77		ELECTR. CAPACITOR	CEAS471M10
C78		ELECTR. CAPACITOR	CEAS330M16
C79		CERAMIC CAPACITOR	CKCYF103Z50
C8, 80		ELECTR. CAPACITOR	CEAS330M16
C81, 82		CERAMIC CAPACITOR	CKCYF103Z50
C83		ELECTR. CAPACITOR	CEAS330M16
C84-87		CERAMIC CAPACITOR	CKCYF103Z50

Mark	No.	Description	Part No.
C88		ELECTR. CAPACITOR	CEAS330M16
C89, 9		CERAMIC CAPACITOR	CKCYF103Z50
C90		ELECTR. CAPACITOR	CEAS330M16
C91		CERAMIC CAPACITOR	CKCYF103Z50
C92		ELECTR. CAPACITOR	CEAS330M16
C93		CERAMIC CAPACITOR	CKCYF103Z50
C94		ELECTR. CAPACITOR	CEAS330M16
C95-98		CERAMIC CAPACITOR	CKCYF103Z50
C99		CERAMIC CAPACITOR	CKCYF102Z50

RESISTORS

R113	RESISTOR ARRAY (10K)	RA7S103J
R118	RESISTOR ARRAY (10K)	RASS103J
R13, 120	RESISTOR ARRAY (10K)	RA8S103J
R23	RESISTOR ARRAY (4.7K)	RA8S472J
R59	RESISTOR ARRAY (10K)	RA8S103J
Other resistors		RD1/6PM □□□ J

OTHERS

X1	CRYSTAL RESONATOR	DSS1001
X2	CERAMIC RESONATOR	VSS-041
X3	CRYSTAL RESONATOR	DSS1014
	PIEZOELECTRIC BUZZER	DPX1002
	IC SOCKET (28-P)	VXH-027

●PAMP (DWH1007)

SEMICONDUCTORS

IC1	AUDIO IC	STK4231-2
Q1	TRANSISTOR	2SC1740S
Q12, 13	P-FET	2SJ103
Q2	TRANSISTOR	2SC1740S
Q3	TRANSISTOR	2SC1775
Q4	TRANSISTOR	2SA933S
Q5	TRANSISTOR	2SC1740S
Q6	TRANSISTOR	2SA123B
Q7, 8	TRANSISTOR	2SA970
D11	DIODE	1SR35-100AVL
D2	DIODE	1SS254
D3	DIODE	1SS142
D5	DIODE	1SR35-100AVL
D7	ZENER DIODE	MTZJ6.8B
D8, 9	DIODE	1SR35-100AVL

RELAY

RY1		RSR1014
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COILS

L1, 2	COIL	DTH1116
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CAPACITORS

C1	CERAMIC CAPACITOR	CKCYB222K50
C10	ELECTR. CAPACITOR	CEAS101M50
C11	ELECTR. CAPACITOR	CEASR22M50
C12	CERAMIC CAPACITOR	CKCYB222K50
C13, 14	ELECTR. CAPACITOR	DCH1018
C16	ELECTR. CAPACITOR	CEAS221M16
C17	ELECTR. CAPACITOR	CEAS101M50
C18	ELECTR. CAPACITOR	CEAS010M50
C19	ELECTR. CAPACITOR	CEAS471M10
C2	ELECTR. CAPACITOR	CEASR22M50

Mark	No.	Description	Part No.
	C21	ELECTR. CAPACITOR	CEAS4R7M50
	C22-25	AUDIO FILM CAPACITOR	CFTXA104J50
	C3	ELECTR. CAPACITOR	CEAS101M10
	C4	ELECTR. CAPACITOR	CEAS470M50
	C6	CAPACITOR (ALUMINUM)	DCH1022
	C7	ELECTR. CAPACITOR	DCH1019
	C8	ELECTR. CAPACITOR	CEAS470M50
	C9	ELECTR. CAPACITOR	CEAS101M10

RESISTORS

R11,12	CARBON FILM RESISTOR	RD1/2LF□□□J
R14	CARBON FILM RESISTOR	RD1/2LF472J
R3,16	CARBON FILM RESISTOR	RD1/2PMP681J
R33	CARBON FILM RESISTOR	RD1/2LF561J
R38,39	RESISTOR	DCN1020
R41-44	CARBON FILM RESISTOR	RD1/2LF100J
R7-9	CARBON FILM RESISTOR	RD1/2LF□□□J
Other resistors		RD1/6PM□□□J

ACIN

COIL

△	L301	FILTER	YTL-004
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CAPACITORS

△	C301-303	CAPACITOR (CERAMIC)	RCG-009
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OTHERS

△	CN36,74	CONNECTOR	SD-5277-02A
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◎ POWB (DWR1078)

SEMICONDUCTORS

IC101	REGULATOR IC	NJM78M05FA
IC102	MECHANISM DRIVER IC	TA7291S
IC103	REGULATOR IC	NJM78M12FA
IC104	REGULATOR IC	NJM78M08FA
IC105	REGULATOR IC	NJM78M08FA

△	IC106	REGULATOR IC	NJM79L12A
	D101	DIODE	SZYB10F
	D102-105	DIODE	1SR139-400
	D106	ZENER DIODE	MTZ4.3C
△	D108	DIODE	SZYB10F
△	D109	DIODE	S10VB10-DP9

CAPACITORS

C101	CERAMIC CAPACITOR	CKCYF103Z50
C102	ELECTR. CAPACITOR	RCH1032
C103	ELECTR. CAPACITOR	CEAS4R7M50
C104	ELECTR. CAPACITOR	CEAS470M25
C105	ELECTR. CAPACITOR	CEAS010M50

C106	ELECTR. CAPACITOR	CEAS221M25
C107	CERAMIC CAPACITOR	CKCYF103Z50
C109	ELECTR. CAPACITOR	CEAS010M50
C110, 111	ELECTROLYTIC CAPACIT	CEAS102M35
C112, 113	CAPACITOR (CERAMIC)	RCG-009

C114,115	ELECTROLYTIC CAPACIT	DCH1034
C116,117	ELECTR. CAPACITOR	CEAS470M25
C118-121	ELECTR. CAPACITOR	CEAS010M50

Mark	No.	Description	Part No.
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RESISTORS

△	R103	CARBON FILM RESISTOR	RD1/2LF47J
△	R112,113	METAL OXIDE RESISTOR	RS1LMF151J
	R114,115	METAL OXIDE RESISTOR	RS1LMF103J
△	R108	METAL OXIDE RESISTOR	RS1LMF3R3J
	R101,102,104-107,110,111	CARBON FILM RESISTOR	RD1/4VM□□□J

OTHERS

△	CN76	CONNECTOR	SD-5277-02A
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PSWB

SWITCH

△	S	POWER SWITCH (POWER)	DSA1005
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CAPACITORS

△	C201,202	CAPACITOR (CERAMIC)	RCG-009
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PSEL

SWITCH

△	S101	VOLTAGE SELECTOR SW	DSX1003
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OPER

SWITCHES

S301-303	LIGHT ACTION SWITCH	DSG-107
{ MEMORY CLEAR, MENU ROTATION, SERVICE MODE }		

◎ SPTB (DWX1124)

OTHERS

△	SPEAKER TERMINAL 4-P	AKE1013
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CRJB

CAPACITORS

C501	CAPACITOR ARRAY	DOG-105
C502	CERAMIC CAPACITOR	CKCYF102Z50
C503	CERAMIC CAPACITOR	CKCYF103Z50

OTHERS

SOCKET (CONTROL)	YKN1072
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◎ MESS (DWG1128)

SEMICONDUCTORS

D101,102	LED	LN0401RP2
D103-105	LED	LN0603RP2

RESISTORS

All resistor	RD1/6PM□□□J
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◎ ASEL (DWS1107)

SWITCH

△	S	VOLTAGE SELECTOR SW (SPEAKER SELECTOR)	DSX1010
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Mark	No.	Description	Part No.
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◎DISP (DWG1129)

SEMICONDUCTORS

D201	LED	LNS26YA
D202, 203	LED	LNS26RA(V)

◎PREB (DWK1013)

SEMICONDUCTORS

IC1	LOGIC IC	TC4052BP
IC2, 3	OP-AMP IC	NJM4558S
Q1, 2	TRANSISTOR	2SC3111A
Q3	TRANSISTOR	2SA933S
Q4	TRANSISTOR	2SC1740S
Q5	TRANSISTOR	DTA124ES
D1	DIODE	1SS254
D2	ZENER DIODE	MT72.5B
D3	ZENER DIODE	MT25.1B/C

CAPACITORS

C1	CERAMIC CAPACITOR	CKCYF103250
C10	CERAMIC CAPACITOR	CGCYX473M25
C11, 12	ELECTR. CAPACITOR	CEAS47M50
C13-15	ELECTR. CAPACITOR	CEAS47M50
C16	MYLOR FILM CAPACITOR	QOMA123J50
C17	AUDIO FILM CAPACITOR	CFTXA473J50
C18	MYLOR FILM CAPACITOR	QOMA122J50
C19	MYLOR FILM CAPACITOR	QOMA682J50
C2	CERAMIC CAPACITOR	CKCYF103250
C20	ELECTR. CAPACITOR	CEAS47M50

C21	ELECTR. CAPACITOR	CEAS470M16
C22	ELECTR. CAPACITOR	CEAS47M50
C23	ELECTR. CAPACITOR	CEAS470M16
C24-26	ELECTR. CAPACITOR	CEAS47M50
C27	MYLOR FILM CAPACITOR	QOMA122J50

C28	MYLOR FILM CAPACITOR	QOMA682J50
C29	ELECTR. CAPACITOR	CEAS47M50
C3	ELECTR. CAPACITOR	CEAS010M50
C30	ELECTR. CAPACITOR	CEAS47M50
C31	MYLOR FILM CAPACITOR	QOMA123J50

C32	AUDIO FILM CAPACITOR	CFTXA473J50
C33, 34	ELECTR. CAPACITOR	CEAS010M50
C35	CERAMIC CAPACITOR	CGCYX473M25
C36	ELECTR. CAPACITOR	CEAS221M16
C4	ELECTR. CAPACITOR	CEAS010M50

C5	CERAMIC CAPACITOR	CGCYX473M25
C6, 7	ELECTR. CAPACITOR	CEAS470M16
C8, 9	CERAMIC CAPACITOR	CGCYX473M25

RESISTORS

VR1	VARIABLE RESISTOR	DCS1013
VR2, 3	VARIABLE RESISTOR	DCS1014
Other resistors		RD1/6PW□□□J

WBFT

OTHERS

CN150, 151

DKA1003

Mark	No.	Description	Part No.
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◎BGMB (DWK1014)

SEMICONDUCTORS

IC201	OP-AMP IC	NJM4558DX
IC202	E-VR IC	W5222L
IC203	LOGIC IC	TC74HC00AP
Q201, 202	TRANSISTOR	2SC1740S
D201, 202, 204	DIODE	1SS254
D203	ZENER DIODE	MT25.1B

SWITCH

S201	SWITCH (STEREO/MONO)	DSH-106
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CAPACITORS

C201, 202	ELECTR. CAPACITOR	CEANP010M50
C203, 204	ELECTR. CAPACITOR	CEAS010M50
C205, 206	ELECTR. CAPACITOR	CEAS47M50
C207, 208	ELECTROLYTIC CAPACIT	CEAS2R2M50
C209	ELECTROLYTIC CAPACIT	CEANP221M10
C210, 211	ELECTR. CAPACITOR	CEAL470M16
C212	CERAMIC CAPACITOR	CKDYB222K50

RESISTORS

VR201	VARIABLE RESISTOR	DCS1010
Other resistors		RD1/6PW□□□J

OTHERS

JA201	PIN JACK	PKB-009
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◎KEYB (DWS1101)

SEMICONDUCTORS

D301-310	LED	SLY-31MC3
D311-314	LED	SLY-31DC3
D315-322	LED	SLY-31YC3

SWITCHES

S301-310	SWITCH (1-10)	DSG1011
S311-316	SWITCH	RS6-155
	(CLEAR, BEST HITS ROTATION MENU)	

RESISTORS

All resistors		RD1/6PW□□□J
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RMJB

SEMICONDUCTOR

D401-404	ZENER DIODE	MTZJ5.6B
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COIL

L401	AXIAL INDUCTOR	LAU010X
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CAPACITORS

C401-406	CERAMIC CAPACITOR	CKCYF103250
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RESISTORS

R401-404	CARBONFILM RESISTOR	RD1/6PW221J
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OTHERS

SOCKET	(REMOTE CONTROL)	VKN1072
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Mark	No.	Description	Part No.
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WBJB**CAPACITORS**

C101, 102	CERAMIC CAPACITOR	CKCYF102Z50
C103	CERAMIC CAPACITOR	CKCYF103Z50

OTHERS

CN101, 102	TERMINAL (WALL BOX CONTROL TERMINAL)	DKA1004
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RSSB**SWITCH**

S201	DIP SWITCH (FUNCTION)	DSX1011
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CAPACITORS

C201, 202	CERAMIC CAPACITOR	CKCYF102Z50
C203, 204	CERAMIC CAPACITOR	CKCYF103Z50

RESISTOR

R201	CARBONFILM RESISTOR	RD1/6PM472J
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OTHERS

J201	SOCKET (DATA OUT)	DKM1037
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IOJB**SEMICONDUCTORS**

Q100, 101	TRANSISTOR	2SA1309A
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CAPACITORS

C100, 101	CERAMIC CAPACITOR	CKPUYB102K50
C102, 103	CERAMIC CAPACITOR	CKCYF103Z50

RESISTORS

R100-103	CARBONFILM RESISTOR	RD1/6PM□□□J
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OTHERS

JA53	JACK (LINE IN/OUT)	HXB-020
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◎BRAN (DWX1108)

There is not supplied parts in this unit.

◎ROTA (DWX1109)**SEMICONDUCTORS**

Q401	DIGITAL TRANSISTOR	1W4112
Q402	TRANSISTOR	2SD1762-F8
Q403	DIGITAL TRANSISTOR	1W4212
Q404	TRANSISTOR	2SB1185-F8
D401, 402	RECTIFIER DIODE	1SR159-400

CAPACITORS

C401	ELECTR. CAPACITOR	CEAL470M6R3
C402	CERAMIC CAPACITOR	CKPUYF223225
C403	ELECTROLYTIC CAPACIT	CEAS101M25

RESISTORS

R401-405	CARBONFILM RESISTOR	RD1/6PM□□□J
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Mark	No.	Description	Part No.
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◎POSS (DWX1110)**SEMICONDUCTOR**

D501		GP1A14
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CAPACITOR

C501	CERAMIC CAPACITOR	CKPUYF223225
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RESISTOR

R501	CARBONFILM RESISTOR	RD1/6PM391J
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SENS**SEMICONDUCTOR**

D701	LED(RED)	SLR-54VR3SH
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CAPACITOR

C701	CERAMIC CAPACITOR	CKPUYF223225
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OTHERS

	REMOTE SENSOR	GP1U50X
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◎CNTB (DWX1132)**SEMICONDUCTOR**

IC801		GP1A30R
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CAPACITOR

C801	CERAMIC CAPACITOR	CKPUYF223225
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RESISTOR

R801	CARBONFILM RESISTOR	RD1/6PM121J
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LAMP**CAPACITORS**

△ C601, 602	CAPACITOR (CERAMIC)	RCG-009
△ C603, 604	POWER CAPACITOR	DCG1003

RESISTOR

△ R601, 602	CARBON FILM RESISTOR	RD1/4PM225J
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OTHERS

△ CN33	CONNECTOR	SD-5277-02A
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◎NETWORK ASSEMBLY (SWN1219)**COILS**

L1	(3.3mH)	STH1100
L3	(3.9mH)	STH1021
L4	(0.22mH)	STH-327

CAPACITORS

C1		CES4220KJ
C2		CES4100KJ
C4		CES4DX1R5KJ

RESISTOR

R4		RT10BAL100K
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OTHERS

Br1 (1A)		SSG-004
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CD SECTION

NOTES:

- Parts without part number cannot be supplied.
- Parts marked by "Ⓢ" are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.
- The Δ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.
- When ordering resistors, first convert resistance values into code form as shown in the following examples.

Ex.1 When there are 2 effective digits (any digit apart from 0), such as 560 ohm and 47k ohm (tolerance is shown by J = 5%, and K = 10%).

560 Ω \rightarrow 56 $\times 10^1 \rightarrow$ 561..... RD1/4PS 561J
 47k Ω \rightarrow 47 $\times 10^3 \rightarrow$ 473..... RD1/4PS 473J
 0.5 Ω \rightarrow 0R5..... RN2H 0R5K
 1 Ω \rightarrow 010..... RS1P 010K

Ex.2 When there are 3 effective digits (such as in high precision metal film resistors).

5.62k Ω \rightarrow 562 $\times 10^1 \rightarrow$ 5621..... RN1/4SR 5621F

Mark	NO	Description	Part NO.
------	----	-------------	----------

EKEY

SWITCHES

S301-303 SWITCH (EJECT(A, B, C)) DSG1009

DEGT (DWX1116)

SEMICONDUCTORS

IC1	PRE AMP IC	CXA1081S
IC10	POWER OP AMP	TA7256P
IC11	SYSTEM PRESET IC	M51953BL
IC2	SERVO CONTROL IC	CXA1082AS
IC3	EFM DEMODULATION IC	CXD1135QZ
IC4	MEMORY IC	CX5816PN-12L
IC5	MCU	FD0068B
IC6-8	POWER OP AMP	TA7256P
Q1	TRANSISTOR	DTA124ES
Q10	TRANSISTOR	DTC124ES
Q11	TRANSISTOR	2SC1740S
Q12	TRANSISTOR	DTA124ES
Q13	TRANSISTOR	2SA933S
Q14	TRANSISTOR	DTA124ES
Q15	TRANSISTOR	2SC249T
Q16	TRANSISTOR	DTC124ES
Q2	TRANSISTOR	2SC249T
Q3	TRANSISTOR	DTA124ES
Q4	TRANSISTOR	2SC249T
Q5	TRANSISTOR	DTA124ES
Q6	TRANSISTOR	2SC249T
Q7, 8	TRANSISTOR	2SC1740S
Q9	TRANSISTOR	2SA1399
D4-7	DIODE	1SS254

CAPACITORS

C1	ELECTR. CAPACITOR	CEAS847M50
C10, 11	CERAMIC CAPACITOR	CCCH300J50
C12, 13	ELECTR. CAPACITOR	CEAS330M16
C14	CERAMIC CAPACITOR	CKCTF103Z50
C15, 16	CERAMIC CAPACITOR	CCCH220J50

Mark	NO	Description	Part NO.
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C17	ELECTR. CAPACITOR	CEAS330M16
C18, 19	CERAMIC CAPACITOR	CKCTB102K50
C2	MYLOR FILM CAPACITOR	CQMA333J50
C20	CERAMIC CAPACITOR	CKCTB102K50
C21, 22	ELECTR. CAPACITOR	CEAS330M16
C23	ELECTR. CAPACITOR	CEAS10M50
C24	CERAMIC CAPACITOR	CKCTB102K50
C25	CERAMIC CAPACITOR	CKCTF103Z50
C26-29	ELECTR. CAPACITOR	CEAS330M16
C3	MYLOR FILM CAPACITOR	CQMA102J50
C30, 31	ELECTR. CAPACITOR	CEAS330M16
C32	ELECTR. CAPACITOR	CEAS101M10
C33	CERAMIC CAPACITOR	CCCH390J50
C34	MYLOR FILM CAPACITOR	CQMA472J50
C35	CERAMIC CAPACITOR	CCCH390J50
C36, 37	ELECTR. CAPACITOR	CEAS330M16
C38	CERAMIC CAPACITOR	CCCH390J50
C39	MYLOR FILM CAPACITOR	CQMA333J50
C40	ELECTR. CAPACITOR	CEAS330M16
C41	MYLOR FILM CAPACITOR	CQMA332J50
C42	MYLOR FILM CAPACITOR	CQMA103J50
C43	ELECTR. CAPACITOR	CEAS847M50
C44	MYLOR FILM CAPACITOR	CQMA103J50
C45	ELECTR. CAPACITOR	CEAS330M16
C46	MYLOR FILM CAPACITOR	CQMA272J50
C47, 48	ELECTR. CAPACITOR	CEAS330M16
C49	MYLOR FILM CAPACITOR	CQMA333J50
C50	ELECTR. CAPACITOR	CEAS330M16
C51	MYLOR FILM CAPACITOR	CQMA472J50
C52, 53	MYLOR FILM CAPACITOR	CQMA104J50
C54	MYLOR FILM CAPACITOR	CQMA102J50
C55	ELECTR. CAPACITOR	CEAS847M50
C56	MYLOR FILM CAPACITOR	CQMA104J50
C57	ELECTR. CAPACITOR	CEAS330M16
C58	MYLOR FILM CAPACITOR	CQMA333J50
C59	MYLOR FILM CAPACITOR	CQMA104J50
C60	ELECTROLYTIC CAPACIT	CEANP47M50
C61, 62	ELECTR. CAPACITOR	CEAS330M16
C63	MYLOR FILM CAPACITOR	CQMA103J50
C64	ELECTR. CAPACITOR	CEAS330M16

Mark	No.	Description	Part No.
	C65	ELECTR. CAPACITOR	CEAS101M10
	C66	MYLOR FILM CAPACITOR	CQMA472J50
	C67	ELECTR. CAPACITOR	CEAS330M50
	C68, 69	ELECTR. CAPACITOR	CEAS330M16
	C70-75	CERAMIC CAPACITOR	COOCH221J50
	C76-78	ELECTR. CAPACITOR	CEANP010M50
	C79, 80	ELECTR. CAPACITOR	CEAS330M16
	C81	CERAMIC CAPACITOR	CKDYF103Z50

RESISTORS

VR2	SEMI-FIXED RESISTOR	VRTB6VS103
VR3-7	VR	VRTB6VS223
VR8	VR	VRTB6VS102
Other resistors		RD1/6PW□□□J

OTHERS

DL1, 2	DELAY LINE	PTF1012
X1	CRYSTAL RESONATOR	DSS1010
X2	CRYSTAL RESONATOR	PSS-012
CN4		B6P-SHP-1AA
CN7		5597-17APB
CN8		B6P-SHP-1AA
	IC SOCKET	VKN-029

DJAK**CAPACITOR**

C501	CAPACITOR ARRAY	DOG1007
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OTHERS

JA501	SOCKET	VKN1072
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PJAK**OTHERS**

JA601	JACK	PKB1009
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MJSW**SWITCHES**

S801-803	PUSH SWITCH	PSH1008
	(MJ LOCK (1, 2, 3))	
S804-806	SWITCH	PSH1005
	(MJ SENS (1, 2, 3))	

SENS**SEMICONDUCTOR**

Q901		GPIA52HR
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SWITCH

S901	(UP LIMIT)	RSP1007
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CAPACITOR

C901	ELECTROLYTIC CAPACIT	CEJA100M16
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RESISTORS

R901, 902	CARBONFILM RESISTER	RD1/6PW□□□J
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Mark	No.	Description	Part No.
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REJC

There is not supplied parts in this unit.

FREC**OTHERS**

CN401, 402	CONNECTOR	5597-17APB
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HRMB

There is not supplied parts in this unit.

RMJB**OTHERS**

MINI JACK 3P	DKN1028
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◎ANLG (DWX1155)**SEMICONDUCTORS**

IC201 D/A CONVERTER	LC7881-C
IC202, 203 LINEAR IC	NJM4558D
IC204 REGULATOR IC	NJM79M05FA
IC205 REGULATOR IC	NJM7805FA
Q201, 202 TRANSISTOR	DTA124ES
Q203 TRANSISTOR	DTA124ES
Q204 TRANSISTOR	DTA124ES
Q205, 206 TRANSISTOR	2SD1302
Q207, 208 TRANSISTOR	2SC1740S
Q209 TRANSISTOR	DTA124ES
D201 BRIDGE RECTIFIER	2W02-5008-L

COIL AND FILTERS

L201 FILTER	VTL-157
F202-204	VTH1001

CAPACITORS

C201, 202 CAPACITOR (CERAMIC)	RCG-009
C203 CAPACITOR (ALUMINUM)	VCH1050
C204 ELECTROLYTIC CAPACIT	CEAS222M16
C205 ELECTR. CAPACITOR	CEAS102M10
C206 ELECTR. CAPACITOR	CEAS471M10
C207, 208 MYLOR FILM CAPACITOR	CQMA102J50
C209, 210 ELECTR. CAPACITOR	CEAS220M50
C211, 212 MYLOR FILM CAPACITOR	CQMA821J50
C213, 214 MYLOR FILM CAPACITOR	CQMA471J50
C215, 216 MYLOR FILM CAPACITOR	CQMA472J50
C217, 218 MYLOR FILM CAPACITOR	CQMA683J50
C219, 220 ELECTR. CAPACITOR	CEAS220M50
C221-225 ELECTR. CAPACITOR	CEAS330M16
C226 ELECTR. CAPACITOR	CEAS101M10
C227 CERAMIC CAPACITOR	CKCYF103Z50

RESISTORS

All resistors	RD1/6PW□□□J
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7. ADJUSTMENTS

7.1 MECHANICAL ADJUSTMENTS

7.1.1 MAIN SECTION

- Synchronous adjustment of three surfaces of the menu (Fig. 7-1)

PREPARATIONS

- Adjust without installing the motor (menu).
 - Fix the center pulley to the menu shaft with the screws.
- (1) Apply synchro belt between synchro pulley and center pulley both on the right and left sides.
 - (2) While applying a spring (tension) to the underframe and tension plate, apply a tension to the synchro belt.
 - (3) Fix the tension plate to the underframe with screw ①.
 - (4) By placing a flat plate such as a ruler on them, align the three surfaces of the menu with each other on the same level.
 - (5) Fix the menu shaft to the synchro pulley using a hexagonal wrench.
 - (6) Remove the plate placed on the menu and check the following items while turning the menu by hand.
 1. Check that the three surfaces of the menu rotate smoothly.
 2. Check that all the three surfaces align with each other on the same level after turning the menu shaft once.

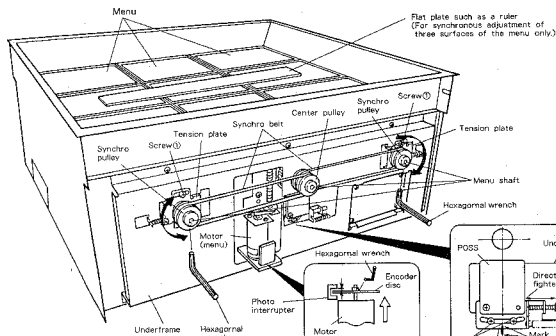


Fig. 7-1

- Adjustment of the stop position of menu rotation

PREPARATIONS

- Loosen screw ② which holds the encoder disc using a hexagonal wrench.
 - Loosen screw ③ which holds the adjustment plate.
 - Adjust with the motor (menu) attached.
- (1) Set the gap between the encoder disc and photo interrupter of the motor (menu) to 1.2 mm. (Fig. 7-2)
 - (2) Fix the screw of the encoder disc by tightening with a hex wrench.
 - (3) Turn screw ③ so that the carved mark on the adjustment plate aligns with the underframe. Then temporarily tighten screw ③.
 - (4) Push the ROTATE MENU key on the front panel of the main unit so that menu rotates. Then, perform the following adjustments depending on the condition. (Fig. 7-3)
 - When the menu stops after extending the front
 - Loosen screw ④, then tighten screw ⑤ turning it clockwise.
 - When menu stops before reaching the front
 - Loosen screw ④ and turn screw ⑤ counterclockwise to loosen it.
 - (5) Turn the menu again and firmly tighten screw ④ when the menu stops directing its surfaces to the front. (Fig. 7-4 ④)
 - (6) Finally, turn the menu and check that the menu stops directing all of its three surfaces to the front at every 120° rotation.

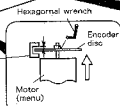


Fig. 7-2

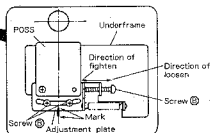


Fig. 7-3

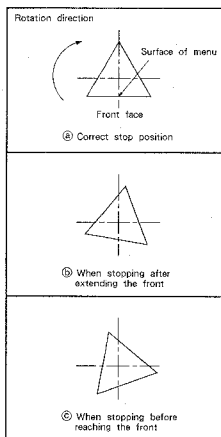


Fig. 7-4

7.1.2 CD SECTION

PREPARATIONS

- Set a magazine in the first and third modules of the CD main unit.
- Connect the remote control unit (RU-V101) to the CD main unit.

1. Rough adjustment of the select position

- Set the distance from the upper side of the sensor plate to that of the main chassis to 7mm by turning screw Ⓐ.

2. Adjustment of the select position

- First, proceed as follows.

① Press the 10keys in the sequence of **[1] + [8] + STILL/STEP▶ (DISC SELECT) key + STILL/STEP◀ (DISC RETURN) key**. When the operation is completed, check that the gap between the top of the rotation lever and the upper side of the sixth tray in the magazine is $0.3^{+0.2}_{-0.1}$ mm.

② If the distance is not within the specified range, turn screw Ⓐ to adjust the position of the sensor plate and press the 10keys again in the sequence of **[1] + [8] + STILL/STEP▶ (DISC SELECT) key + STILL/STEP◀ (DISC RETURN) key** until the distance comes within the specified range.

③ Push the 10keys in the sequence of **[6] + STILL/STEP▶ (DISC SELECT) key + STILL/STEP◀ (DISC RETURN) key** and check that the gap between the top of the rotation lever and the upper side of the sixth tray in the magazine is $0.3\text{mm} \pm 0.1\text{mm}$.

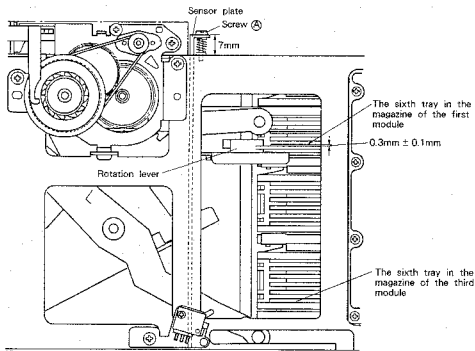


Fig. 7-5

7.2 ELECTRICAL ADJUSTMENTS

The adjustment items of this model should be performed in the order as shown below.

• Adjustment and check items

1. Tracking offset focus offset and RF offset adjustments
2. RF level adjustment
3. LD (Laser Diode) output power confirmation
4. Focus lock and spindle lock confirmation
5. Grating adjustment
6. Tracking balance adjustment
7. Tangential adjustment
8. Focus gain adjustment
9. Tracking gain adjustment
10. VCO free-run frequency adjustment
11. Method to confirm S character (FOCUS ERROR)

• Measuring Equipment

1. Dual trace oscilloscope
2. Laser power meter
3. Test disc (YEDS-7)
4. Tracking balance adjustment filter
5. Loop gain adjustment filter
6. Signal generator
7. Frequency counter
8. Other general tools
9. Remote control unit (RU-V101)

• Service Mode

The CD main unit can be operated independently when remote control unit (RU-V101) is connected to the unit.

For the operation, refer to Service manual (1) (ARP2047) : Service Mode (page 14).

Note: Before operating the remote control unit (RU-V101), move the mechanism by using the 10keys + STILL/STEP▶ (DISC SELECT) key to the position where the test disc has been placed.

• Adjustment VRs and their names

- VR1 : Laser power
- VR2 : RF offset (RF.OFS)
- VR3 : Focus gain (FCS.GAN)
- VR4 : Tracking gain (TRK.GAN)
- VR5 : Tracking balance (TRK.BAL)
- VR6 : Focus offset (FCS.OFS)
- VR7 : Tracking offset (TRK.OFS)
- VR8 : VCO adjustment (VCO.ADJ)

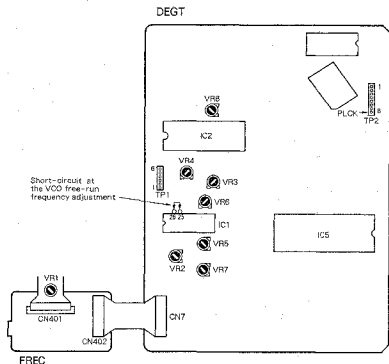
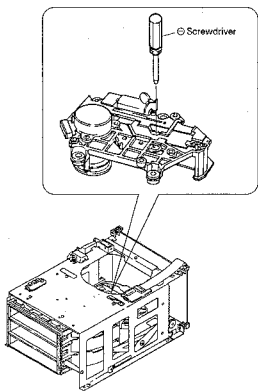
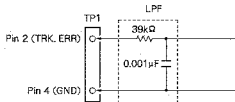


Fig. 7-6 Adjusting point

Step No.	Oscilloscope Setting		Test Points	Adjusting Points	Check items/ Adjustment specifications	Adjustment procedure
	V	H				
1 TRACKING OFFSET, FOCUS OFFSET AND RF OFFSET ADJUSTMENT						
			TP1 Pin 2 (TRK. ERR) TP1 Pin 6 (FCS. ERR) TP1 Pin 1 (RF OUTPUT)	VR5 (TRK. BAL.) VR7 (TRK. OFS) VR6 (FCS. OFS) VR2 (RF. OFS)	Tracking offset 45° 0V ± 50mV FOCUS offset 0V ± 50mV RF offset 100mV ± 50mV	<ul style="list-style-type: none">● Set to Service mode.● Turn VR5 TRK. BAL. (Tracking balance) volume clockwise 45° from the center.● Adjust with VR7 TRK. OFS (Tracking offset) volume so that the voltage of pin 2 TRK. ERR (Tracking error) of TP1 becomes 0V ± 50mV.● Adjust VR6 FCS. OFS (focus offset) so that the FCS. ERR (focus error) voltage at TP1 pin 6 becomes 0V ± 50mV.● Adjust VR2 RF. OFS (RF offset) so that the RF output voltage at TP1 pin 1 becomes 100mV ± 50mV.
2 RF LEVEL ADJUSTMENT						
			TP1 Pin 1 (RF)	VR1 Laser power	1.5Vp-p $\pm \frac{0.2V}{0V}$	<ul style="list-style-type: none">● Set to Service mode.● Play TEST disc and connect probe of an oscilloscope to pin 1 RF (RF output) of TP1 and measure the P-P voltage of RF waveform.● Adjust VR1 (Laser power) so that the value is within 1.5Vp-p $\pm \frac{0.2V}{0V}$.
3 LD (LASER DIODE) OUTPUT POWER CONFIRMATION						
					Confirmation : less than 0.13mW	<ul style="list-style-type: none">● Set to Service mode.● Press [MULTI-SPEED+] key + [0] and turn ON LD (laser diode).● Place sensor of the laser power meter immediately above the object lens and confirm that the output power of the LD is less than 0.13mW.
4 FOCUS LOCK AND SPINDLE LOCK CONFIRMATION						
	0.5V/div	100msec /div	TP1 Pin 1 (RF output)		RF output exists Normal rotation	<ul style="list-style-type: none">● Set TEST disc.● Set to Service mode.● Shift the pickup close to the center of the disc by pressing the [MULTI-SPEED+] key + [4]. * Note that this step must be performed.● Observe pin 1 RF (RF output) of TP1 with an oscilloscope and confirm that the RF signal is output after pressing the [MULTI-SPEED+] key + [1].● Press [MULTI-SPEED+] key + [2] and be sure that the disc rotates in normal direction at almost the specified speed (as it is close to the center of the disc, the rotating speed is around 300 rpm) and not rotates abnormally or inversely.

Step No.	Oscilloscope Setting		Test Points	Adjusting Points	Check items/Adjustment specifications	Adjustment procedure
5	V	H				
GRATING ADJUSTMENT						
						 <p>Fig. 7-7</p>
0.5V/div	5msec/div	TP1 Pin 2 (TRK. ERR)	Grating Grating	Null point Maximum amplitude		<ul style="list-style-type: none"> Set to Service mode. Shift the pickup close to the center of the disc by pressing [MULTI-SPEED+] key + [4] so that the grating adjustment screw of the pickup can be seen through the oval hole of the upper side of the servo mechanism. Insert the \odot screwdriver into the adjusting hole from the upper side of the mechanism as shown in Fig. 7-7, and confirm that the grating screw turns. Press [MULTI-SPEED+] key + [1] and [MULTI-SPEED+] key + [2] sequentially and close the focus servo and spindle servo. (Do not close the tracking servo.) Observe the waveform of pin 2 TRK. ERR (Tracking error) of TP1 with an oscilloscope. At this point, insert a 4kHz cutoff low-pass filter. (Fig. 7-8)  <p>Fig. 7-8</p> <ul style="list-style-type: none"> Turn the \odot screwdriver and find null point. (Photo. 7-1) Then, turn slowly the \odot screwdriver counterclockwise from the null point and adjust at the point where the waveform (Tracking error signal) firstly becomes maximum amplitude. (See Photo. 7-2.) <p>Note: If the \odot screwdriver is pressed strongly, the pickup moves toward disc center, accordingly adjustment becomes difficult.</p> <ul style="list-style-type: none"> Finally, be sure to confirm that the tracking error signal (at this time, 4kHz of cutoff low-pass filter is not inserted) when the pickup is moved toward the disc center and the P-P voltage of the tracking error signal at the outer circumference of the disc are not varied greatly. When the level is deviated over $\pm 10\%$, adjust again by turning grating screw to the maximum error amplitude point.

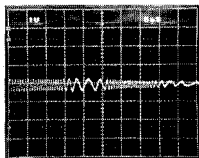


Photo. 7-1
Null point

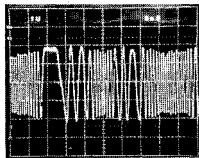


Photo. 7-2
Maximum amplitude

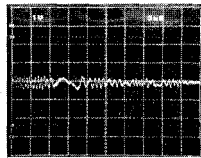
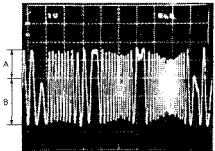
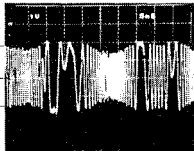
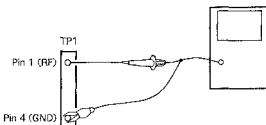
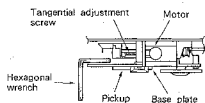


Photo. 7-3
This is not the null-point waveform

Step No.	Oscilloscope Setting		Test Points	Adjusting Points	Check items/ Adjustment specifications	Adjustment procedure
	V	H				
6 TRACKING BALANCE ADJUSTMENT						
	0.5V/div	5msec /div	TP1 Pin 2 (TRK. ERR)	VR5 (TRK. BAL)	(TRK. ERR)	<ul style="list-style-type: none"> ● Set the TEST disc. ● Set to Service mode. ● Shift the carriage close to the center of the disc by pressing [MULTI-SPEED+] key + [4]. ● Press [MULTI-SPEED+] key + [1] and [MULTI-SPEED+] key + [2] to start turning the disc. ● Observe pin 2 TRK. ERR (Tracking error) of TP1 with an oscilloscope and adjust with VR5 TRK. BAL (Tracking balance) volume so that the DC component of the tracking error disappears. <p>Note: Before proceeding with the above adjustments, be sure to adjust the tracking error offset.</p>
<div style="display: flex; align-items: center; justify-content: space-around;"> <div style="text-align: center;">  <p>Photo. 7-4 DC elements mixed in signal</p> </div> <div style="font-size: 2em;">➡</div> <div style="text-align: center;">  <p>Photo. 7-5 DC elements eliminated</p> </div> </div>						

Step No.	Oscilloscope Setting		Test Points	Adjusting Points	Check items/ Adjustment specifications	Adjustment procedure
	V	H				
7	TANGENTIAL ADJUSTMENT					
		200nsec /div	TP1 Pin 1 (RF output)	Tangential adjustment screw	Best eye pattern	<ul style="list-style-type: none"> ● Set the TEST disc. ● Set to Service mode. ● Shift the pickup close to the center of the disc by pressing [MULTI-SPEED+] key + [4]. ● Press [MULTI-SPEED+] key + [1], [MULTI-SPEED+] key + [2] and [MULTI-SPEED+] key + [3] sequentially, and close all the servos. (Pause indicator lights up.) ● Observe pin 1 RF (RF output) of TP1 with an oscilloscope and adjust with the tangential screw so that the eye pattern becomes clear. (Fig. 7-9 and 7-10) ● The adjusting point is the middle point between the point where the eye pattern becomes deteriorate by turning the tangential screw clockwise and the point where the eye pattern becomes deteriorate by turning the tangential screw counterclockwise. As a criterion, observe that the overall waveform is clear and one of the diamond shapes within the eye pattern (Photo. 7-7), and adjust at as an optimum point where the diamond shape is seen relatively fine line.
 <p>Fig. 7-9</p> <p>Note : During the adjustment, hold hexagonal wrench to upward so as to keep the pickup body not goes down.</p>						



In the figure below, the top and bottom is opposite to that of the actual product.

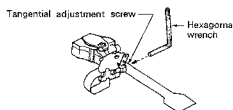


Fig. 7-10 Tangential adjustment

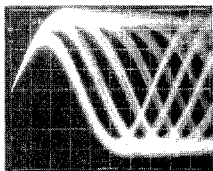


Photo. 7-6

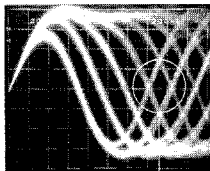


Photo. 7-7

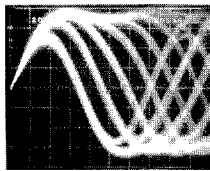
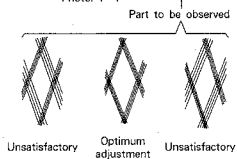
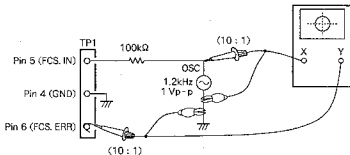
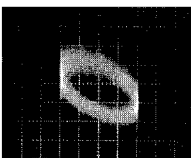
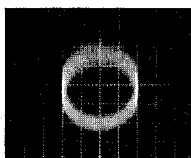
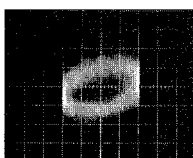


Photo. 7-8



Step No.	Oscilloscope Setting		Test Points	Adjusting Points	Check items/ Adjustment specifications	Adjustment procedure
	V	H				
8 FOCUS GAIN ADJUSTMENT						
	20mV/div, 5mV/div. CH1 (X), CH2 (Y) (Probe 10 : 1)		X axis : TP1 Pin 5 (FCS.IN) Y axis : TP1 Pin 6 (FCS.ERR)	VR3 (PCS. GAN)	Phase difference 90°	<ul style="list-style-type: none"> ● In the POWER OFF state, connect an oscilloscope and oscillator as shown in Fig. 7-11. ● Set the unit to the normal PLAY mode. ● Turn the POWER of oscillator ON and output 1.2kHz 1Vp-p. <p>Note : Depending upon oscillators, some of them output DC when their power turned ON. Therefore, it is desirable to connect oscillator after turning the power ON.</p> <ul style="list-style-type: none"> ● Adjust with VR3 FCS.GAN (Focus gain) volume so that the lissajous figure of the oscilloscope becomes horizontal circle (Phase difference 90°).
 <p style="text-align: center;">Fig. 7-11</p>						
<div style="display: flex; justify-content: space-around; align-items: flex-end;"> <div style="text-align: center;">  <p>Photo. 7-9 Gain overcompensated</p> </div> <div style="text-align: center;">  <p>Photo. 7-10 Gain optimum</p> </div> <div style="text-align: center;">  <p>Photo. 7-11 Gain undercompensated</p> </div> </div>						

Step No.	Oscilloscope Setting		Test Points	Adjusting Points	Check items/ Adjustment specifications	Adjustment procedure
	V	H				
9 TRACKING GAIN ADJUSTMENT						
	50mV/div, 5mV/div, CH1 (X), CH2 (Y) (Probe 10 : 1)	X axis : TP1 Pin 3 (TRK, IN) Y axis : TP1 Pin 2 (TRK, ERR)		VR4 (TRK, GAN)	Phase difference 90°	<ul style="list-style-type: none"> ● In the POWER OFF state, connect an oscilloscope and oscillator as shown in Fig. 7-12. ● Set the unit to the normal PLAY mode. ● Turn the POWER of oscillator ON and output 1.2kHz 2Vp-p. <p>Note: Depending upon oscillators, some of them output DC when their power turned ON. Therefore, it is desirable to connect oscillator after turning the power ON.</p> <ul style="list-style-type: none"> ● Adjust with VR4 TRK. GAN (Tracking gain) volume so that the lissajous figure of the oscilloscope becomes horizontal circle (phase difference 90°).

Fig. 7-12

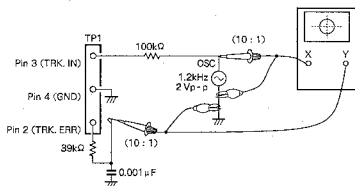


Fig. 7-12

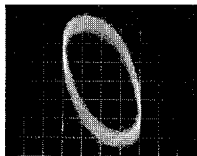


Photo. 7-12
Gain overcompensated

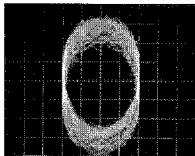


Photo. 7-13
Gain optimum

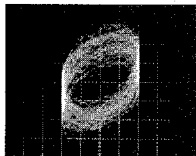


Photo. 7-14
Gain undercompensated

Step No.	Oscilloscope Setting		Test Points	Adjusting Points	Check items/ Adjustment specifications	Adjustment procedure
	V	H				
10	VCO FREE RUN FREQUENCY ADJUSTMENT					
			TP2 Pin 8 (PLCK)	VR8 (VCO. ADJ)	4.275 ± 0.01MHz	<ul style="list-style-type: none">● Set to Service mode.● Short-circuit between pin 25 and pin 26 of IC1 in the DEGT assembly with ⊖ screwdriver, etc. (Fig. 7-8)● Connect frequency counter, which is measurable over 10MHz, to pin 8 of TP2 (PLCK).● Adjust with VR8 VCO. ADJ (VCO adjustment) volume so that the value of frequency counter becomes 4.275 ± 0.01MHz.
11	METHOD TO CONFIRM S CHARACTER (FOCUS ERROR)					
			TP1 Pin 6 (FCS. ERR)			<ul style="list-style-type: none">● Set to Service mode.● Short-circuit between pin 5 FCS.IN (Focus in) of TP1 and GND.● Press MULTI-SPEED+ key + □ and observe the waveform of pin 6 FCS.ERR (Focus error) of TP1 at that time with an oscilloscope.

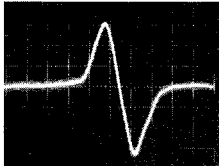


Photo. 7-15 Focus error

7. RÉGLAGES

7.1 RÉGLAGES MECANIQUE

7.1.1 SECTION PRINCIPALE

- Réglages synchronisés de trois surfaces du menu (Fig. 7-1)

PRÉPARATIFS

- Ajuster sans installer le moteur (menu).
- Fixer la poulie centrale à l'arbre de menu à l'aide des vis.

- (1) Placer des ceintures de synchronisation entre la poulie centrale et les poulies de synchronisation droite et gauche.
- (2) Tout en appliquant une tension sur le châssis et la plaquette de tension, tirer sur la ceinture de synchronisation.
- (3) Fixer la plaquette de tension au châssis avec une vis ①.
- (4) Tout en plaçant une plaquette plate tel qu'une règle entre les surfaces du menu, les aligner au même niveau.
- (5) Fixer l'arbre de menu à la poulie de synchronisation en utilisant la clé hexagonale.
- (6) Retirer la plaquette placée dans le menu et vérifier les points suivants en tournant le menu à la main.
 1. Vérifier que les trois surfaces du menu pivotent de façon régulière.
 2. Vérifier que les trois surfaces sont alignées au même niveau après une rotation de l'arbre du menu.

- Réglage de la position d'arrêt de la rotation du menu (PRÉPARATIFS)

- Desserrer la vis ② maintenant le disque codeur en utilisant la clé hexagonale.
- Desserrer la vis ③ maintenant la plaquette de réglage.
- Ajuster avec le moteur (menu) joint.

- (1) Régler le jeu entre le disque codeur et le photointerrupteur du moteur (menu) à 1-2 mm. (Fig. 7-2)

- (2) Fixer la vis du disque codeur en la serrant à l'aide d'une clé hexagonale.

- (3) Tourner la vis ④ de manière à ce que le repère ciselé sur la plaquette de réglage soit alignée avec le châssis. Puis, serrer temporairement la vis ④.

- (4) Pousser la touche ROTATE MENU sur le panneau avant de l'appareil principal de manière à faire tourner le menu. Effectuer, ensuite, les réglages suivants en fonction des conditions. (Fig. 7-3)

- Lorsque le menu s'arrête en dépassant l'avant Desserrer la vis ④, puis serrer la vis ⑤ en la tournant dans le sens des aiguilles d'une montre.

- Lorsque le menu s'arrête avant d'atteindre l'avant Desserrer la vis ⑤, puis tourner la vis ④ dans le sens contraire des aiguilles d'une montre pour la desserrer.

- (5) Tourner le menu de nouveau, et serrer fermement la vis ④ lorsqu'il s'arrête en dirigeant ses surfaces vers l'avant. (Fig. 7-4 ④)

- (6) Finalement, tourner le menu et vérifier qu'il s'arrête en dirigeant toutes ses trois surfaces vers l'avant à chaque rotation de 120°.

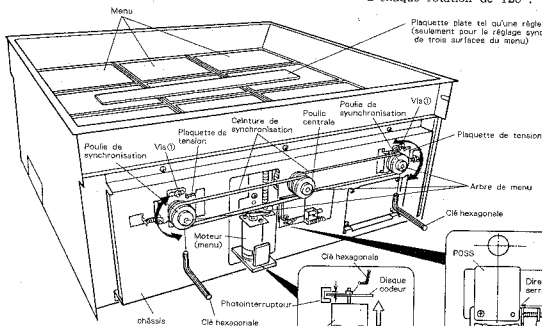


Fig. 7-1

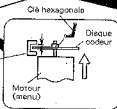


Fig. 7-2

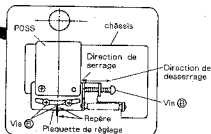


Fig. 7-3

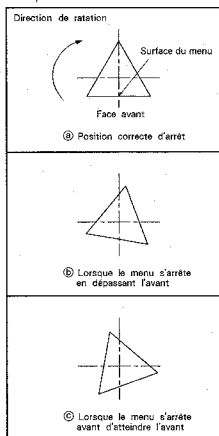


Fig. 7-4

7.1.2 SECTION CD

PRÉPARATIFS

- Mettre un magasin dans les première et sixième modules de l'appareil principal CD.
- Brancher la télécommande RU-V101 sur l'appareil principal CD.

1. Réglage approximatif de la position de sélection
 - (1) Régler le jeu entre le côté supérieur de la plaquette de détecteur et celui du châssis principal à 7 mm en serrant la vis Ⓐ.
2. Réglage de la position de sélection
 - (1) Procéder comme suit :
 - ① Appuyer sur les touches par ordre [1] + [8] + STILL/STEP▶ (DISC SELECT) + STILL/STEP◀ (DISC RETURN). Après cette opération, vérifier que le jeu entre le haut du levier de rotation et le côté supérieur du sixième plateau dans le magasin est de 0.3 ± 0.2 .
 - ② Si le jeu est hors de la gamme spécifiée, tourner la vis Ⓐ pour régler la position de la plaquette de détecteur, et appuyer de nouveau sur les touches par ordre [1] + [8] + STILL/STEP▶ (DISC SELECT) + STILL/STEP◀ (DISC RETURN) de façon que le jeu soit dans la gamme spécifiée.
 - ③ Appuyer sur les touches par ordre [6] + STILL/STEP▶ (DISC SELECT) + STILL/STEP◀ (DISC RETURN), et vérifier que le jeu entre le haut du levier de rotation et le côté supérieur du sixième plateau dans le magasin est de $0.3 \text{ mm} \pm 0.1 \text{ mm}$.

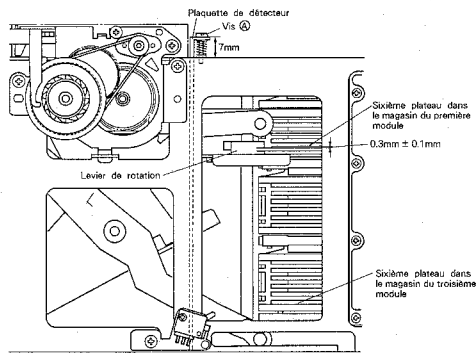


Fig. 7-5

7.2 RÉGLAGES ELECTRIQUES

Les réglages pour ce modèle doivent être réalisés dans l'ordre indiqué ci-dessous.

• Réglages et vérifications à effectuer

1. Réglages de l'offset de centrage de piste, de l'offset de focalisation et de l'offset RF.
2. Réglage du niveau RF
3. Vérification de la puissance de sortie de la diode laser (LD)
4. Vérification du verrouillage de focalisation et du verrouillage de moyeu
5. Réglage du réseau
6. Réglage de l'équilibrage de centrage de piste
7. Réglage tangentiel
8. Réglage du gain de focalisation
9. Réglage du gain de centrage de piste
10. Réglage de la fréquence propre du VCO
11. Méthode de contrôle de la caractéristique S (erreur de focalisation)

• Matériel de mesure

1. Oscilloscope double trace
2. Appareil de mesure pour puissance laser
3. Disque d'essai (YEDS-7)
4. Filtre de réglage pour équilibrage de centrage de piste
5. Filtre de réglage pour gain de boucle
6. Générateur de signal
7. Fréquence-mètre
8. Outillage général divers
9. Télécommande (RU-V101)

• Mode d'entretien

L'appareil principal CD peut être fonctionné indépendamment quand la télécommande RU-V101 est branchée sur l'appareil. Pour les détails sur le fonctionnement, voir "Mode d'entretien" (page 14) du manuel d'entretien (1) (ARP2047).

Remarque :

Avant le fonctionnement avec la télécommande RU-V101, déplacer le mécanisme à la position où le disque d'essai est placé en appuyant sur une des touches numériques et la touche STILL/STEP▶ (DISC SELECT).

• Dispositifs d'ajustement et no menclature

VR1 : Puissance laser
 VR2 : Offset RF (RF.OFS)
 VR3 : Gain de focalisation (FCS.GAN)
 VR4 : Gain de centrage de piste (TRK.GAN)
 VR5 : Equilibrage de centrage de piste (TRK.BAL)
 VR6 : Décalage de focalisation (FCS.OFS)
 VR7 : Décalage de centrage de piste (TRK.OFS)
 VR8 : Réglage du VCO (VCO.ADJ)

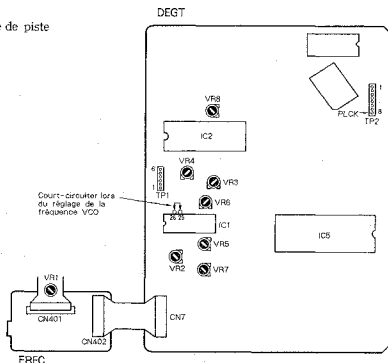
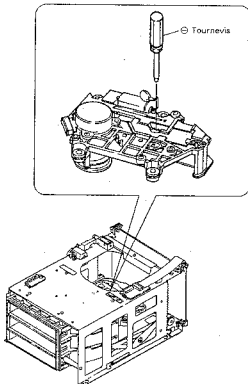

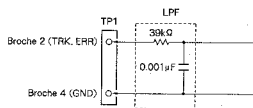





Fig. 7-6 Point de réglage

Pas No.	Réglage de l'oscilloscope		Points d'essai	Points de réglage	Points de contrôle / spécifications de réglage	Méthode de réglage
	V	H				
1	RÉGLAGES DE L'OFFSET DE CENTRAGE DE PISTE, DE L'OFFSET DE FOCALISATION ET DE L'OFFSET RF					
			TP1 Broche 2 (TRK. ERR)	VR5 (TRK. BAL) VR7 (TRK. OFS)	Offset de centrage de piste 45° 0V ± 50mV	<ul style="list-style-type: none">● Régler le mode d'essai (TEST).● Tourner le potentiomètre VR5 TRK. BAL (équilibre de centrage de piste) de 45° depuis le centre dans le sens des aiguilles d'une montre.● Ajuster le potentiomètre VR7 TRK. OFS (décalage de centrage de piste) de façon à ce que la tension à la broche 2 TRK. ERR (erreur de centrage de piste) de TP1 devienne égale à 0V ± 50 mV.
			TP1 Broche 6 (FCS. ERR)	VR6 (FCS. OFS)	Offset de focalisation 0V ± 50mV	<ul style="list-style-type: none">● Régler VR6 FCS. OFS (offset de focalisation) de manière à ce que la tension de FCS. ERR (erreur de focalisation) relevée sur la broche 6 de TP1 soit de 0V ± 50 mV.
			TP1 Broche 1 (RF OUTPUT)	VR2 (RF. OFS)	Offset RF 100mV ± 50mV	<ul style="list-style-type: none">● Régler VR2 RF. OFS (offset RF) de manière à ce que la tension de RF OUTPUT (sortie RF) relevée sur la broche 1 de TP1 soit de 100 mV ± 50 mV.
2	RÉGLAGE DU NIVEAU RF					
			TP1 Broche 1 (RF)	VR1 Puissance laser	1,5 Vc-c \pm $\begin{smallmatrix} +0,2V \\ -0V \end{smallmatrix}$	<ul style="list-style-type: none">● Régler le mode d'essai (TEST).● Reproduire le disque d'essai (TEST) et raccorder la sonde d'un oscilloscope à la broche 1 RF (sortie RF) de TP1 et mesurer la tension C-C de la forme d'onde RF.● Régler VR1 (puissance laser) de façon que la tension soit de 1,5 Vc-c \pm $\begin{smallmatrix} +0,2V \\ -0V \end{smallmatrix}$.
3	VÉRIFICATION DE LA PUISSANCE DE SORTIE DE LA DIODE LASER (LD)					
					Confirmation : moins de 0,13mW	<ul style="list-style-type: none">● Régler le mode d'essai (TEST).● Appuyer sur la touche de centrage de piste arrière [MULTI-SPEED+] + [0] et enclencher la diode laser (LD).● Placer la capteur de l'instrument destiné à mesurer la puissance laser au dessus de l'objectif et vérifier que la puissance de sortie de la diode laser (LD) est inférieure à 0,13 mW.
4	VÉRIFICATION DU VERROUILLAGE DE FOCALISATION ET DU VERROUILLAGE DE MOYEU					
	0,5V/div	100msec /div	TP1 Broche 1 (Sortie RF)		Présence de sortie RF Rotation normale	<ul style="list-style-type: none">● Mettre en place le disque d'essai (TEST).● Régler le mode d'essai (TEST).● Déplacer la tête de lecture à proximité du centre du disque en appuyant sur la touche de recherche [MULTI-SPEED+] + [4].* Cette étape doit absolument être réalisée.● Observer le signal RF à la broche 1 de TP1 (sortie RF) au moyen d'un oscilloscope et vérifier que le signal RF sorte après l'enfoncement de la touche d'avance de piste [MULTI-SPEED+] + [1].● Appuyer sur la touche de lecture [MULTI-SPEED+] + [2] et s'assurer que le disque tourne en sens normal avec approximativement la vitesse spécifiée (étant près du centre du disque, la vitesse de rotation est d'environ 300 tr/mm), sans anomalie ni inversion du sens de rotation.

Pas No.	Réglage de l'oscilloscope		Points d'essai	Points de réglage	Points de contrôle / spécifications de réglage	Méthode de réglage	
	V	H					
5	RÉGLAGE DU RÉSEAU						
	<div></div>						
							<div><p>● Régler le mode d'essai (TEST).</p><p>● Amener la tête de lecture à proximité du centre du disque en appuyant sur la touche de recherche manuelle avant [MULTI-SPEED+] + [4], de façon à ce que la vis de réglage du réseau de la tête de lecture puisse être vue à travers le trou oval situé à la partie supérieure de l'asservissement.</p><p>● Insérer un  tournevis dans le trou de réglage depuis la partie supérieure du mécanisme, comme illustré à la figure 7-7, puis vérifier que la vis de réseau tourne.</p><p>● Appuyer séquentiellement sur les touches de piste avant [MULTI-SPEED+] + [1] et [MULTI-SPEED+] + [2], et fermer les asservissements de focalisation et de moyen. (Ne pas fermer l'asservissement de centrage de piste.)</p><p>● Observer la forme d'onde à la broche 2 TRK. ERR (erreur de centrage de piste) de TP1 au moyen d'un oscilloscope. Introduire alors un filtre de coupure passe-bas 4kHz. (Fig. 7-8)</p></div> <div></div> <div><p>Fig. 7-7</p><p>Fig. 7-8</p></div>
0,5V/div	5msec /div	TP1 Broche 2 (TRK. ERR)	Réseau Réseau	Point zéro Amplitude maximum	<div><p>● Faire tourner un  tournevis et rechercher le point zéro. (Photo 7-1)</p><p>● Tourner ensuite lentement dans le sens contraire des aiguilles d'une montre le  tournevis depuis le point zéro et l'ajuster sur le point où la forme d'onde (signal d'erreur de centrage de piste) présente une première amplitude maximum. (Voir photo 7-2.)</p><p>Note :</p><p>Si le  tournevis est appuyé avec force, la tête de lecture se déplace vers le centre du disque et le réglage devient difficile à effectuer.</p><p>● Finalement, s'assurer que le signal d'erreur de centrage de piste (cette fois-ci le filtre de coupure passe-bas à 4kHz n'est pas introduit) n'a pas beaucoup varié lorsque la tête de lecture est déplacée vers le centre du disque, et aussi que la tension C-C du signal de centrage de piste n'a pas non plus beaucoup varié sur la circonférence extérieure du disque. Lorsque le niveau varie de plus de $\pm 10\%$, recommencer le réglage en tournant la vis de réseau jusqu'au point d'amplitude d'erreur maximum.</p></div>		

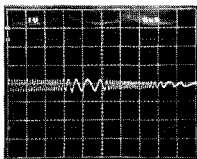


Photo. 7-1
Point nul

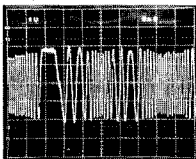


Photo. 7-2
Amplitude maximale

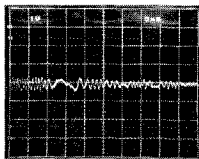
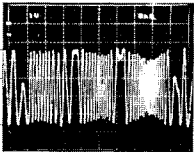

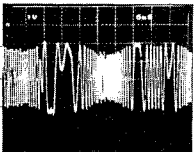


Photo. 7-3
Ceci n'est pas la forme d'onde du point nul

Pas No.	Réglage de l'oscilloscope		Points d'essai	Points de réglage	Points de contrôle / spécifications de réglage	Méthode de réglage
	V	H				
6 RÉGLAGE DE L'EQUILIBRAGE DE CENTRAGE DE PISTE						
	0,5V/div	5msec /div	TP1 Broche 2 (TRK. ERR)	VR5 (TRK. BAL)	TRK, ERR	<ul style="list-style-type: none">● Mettre en place le disque d'essai (TEST).● Régler le mode d'essai (TEST).● Amener la tête de lecture à proximité du centre du disque en appuyant sur la touche de recherche manuelle avant [MULTI-SPEED+] + [4].● Appuyer sur la touche de piste avant [MULTI-SPEED+] + [1] et sur la touche de lecture [MULTI-SPEED+] + [2] pour faire tourner le disque.● Observer la broche 2 TRK. ERR (erreur de centrage de piste) de TP1 au moyen d'un oscilloscope et ajuster au moyen de potentiomètre VR5 TRK. BAL (équilibrage de centrage de piste) de façon à ce que la composante continue de l'erreur de centrage de piste disparaisse. <p>Note: Avant de procéder aux ajustements ci-dessus, veiller à régler le décalage d'erreur de piste.</p>
<div><div></div><div></div><div></div></div>						
<div><div>Photo. 7-4 Éléments CC mêlés au signal</div><div>Photo. 7-5 Éléments CC éliminés</div></div>						

Pas No.	Réglage de l'oscilloscope		Points d'essai	Pointe de réglage	Points de contrôle / spécifications de réglage	Méthode de réglage
	V	H				
7	RÉGLAGE TANGENTIEL					
		200nsec /div	TP1 Broche 1 (sortie RF)	Vis de réglage tangentiel	Mire Best Eye	<ul style="list-style-type: none"> ● Mettre en place le disque d'essai (TEST) ● Régler le mode d'essai (TEST). ● Amener la tête de lecture à proximité du centre du disque en appuyant sur la touche de recherche manuelle avant [MULTI-SPEED+] + [4]. ● Appuyer séquentiellement sur les touches d'avance de piste [MULTI-SPEED+] + [1], [MULTI-SPEED+] + [2] et [MULTI-SPEED+] + [3], et fermer tous les asservissements. (Le voyant de pause s'allume.) ● Observer le signal RF à la broche 1 (sortie RF) de TP1 au moyen d'un oscilloscope et régler au moyen de la vis tangentielle, de façon à ce que la mire Best Eye devienne claire. (Fig. 7-9 et 7-10) ● Le point de réglage se situe au milieu entre le point où la mire se détériore en tournant la vis tangentielle dans le sens des aiguilles d'une montre et le point où la mire se détériore en tournant la vis tangentielle dans le sens inverse des aiguilles d'une montre. Comme critère, observer que la forme d'onde globale soit claire et que l'une des formes de losange se situe dans la mire (Photo 7-7) ; réaliser le réglage en un point optimum où la forme de losange apparaît avec des traits relativement fins.

Fig. 7-9

Note : Pendant le réglage, tenir la clef six-pans vers le haut de façon à ce que le corps de la tête de lecture ne descende pas.

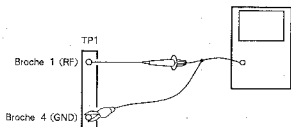
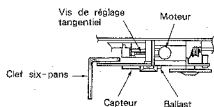


Fig. 7-9

Note : Pendant le réglage, tenir la clef six-pans vers le haut de façon à ce que le corps de la tête de lecture ne descende pas.



Dans l'illustration ci-dessous, le dessus et le dessous de l'appareil sont en réalité à l'envers.

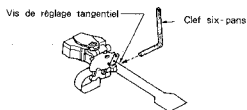


Fig. 7-10 Réglage tangentiel

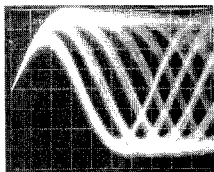


Photo. 7-6

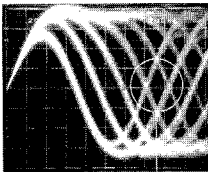


Photo. 7-7

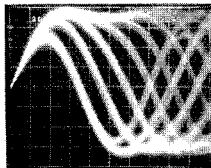
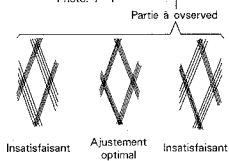
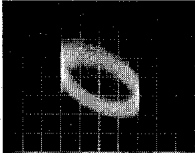
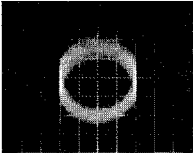
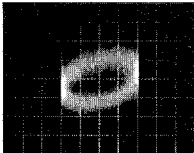


Photo. 7-8



Pas No.	Réglage de l'oscilloscope		Points d'essai	Points de réglage	Points de contrôle / spécifications de réglage	Méthode de réglage
	V	H				
8	RÉGLAGE DU GAIN DE FOCALISATION					
	20mV/div, 5mV/div. Canal 1 (X). Canal 2 (Y) (Sonde 10 : 1)	Axe X : TP1 Broche 5 (FCS. IN) Axe Y : TP1 Broche 6 (FCS. ERR)	VR3 (FCS. GAN)	Différence de phase 90°	<ul style="list-style-type: none"> ● L'alimentation étant coupée (POWER OFF), raccorder un oscilloscope et un oscillateur de la manière indiquée à la figure 7-11. ● Régler l'appareil en mode de lecture normale. ● Enclencher l'alimentation de l'oscillateur et délivrer un signal de 1,2 kHz à 1Vc-c. <p>Note: En fonction de l'oscillateur utilisé, certains appareils fournissent un courant continu lors de leur enclenchement. Par conséquent, il est préférable de raccorder l'oscillateur après avoir enclenché son alimentation.</p> <ul style="list-style-type: none"> ● Ajuster le potentiomètre VR3 FCS. GAN (gain de focalisation) de façon à ce que la figure de Lissajou observée sur l'oscilloscope devienne un cercle horizontal (déphasage 90°). 	
						Fig. 7-11
<div style="display: flex; justify-content: space-around; align-items: flex-end;"> <div style="text-align: center;">  <p>Photo. 7-9 Gain sur-compensé</p> </div> <div style="text-align: center;">  <p>Photo. 7-10 Gain optimal</p> </div> <div style="text-align: center;">  <p>Photo. 7-11 Gain sous-compensé</p> </div> </div>						

Pas No.	Réglage de l'oscilloscope		Points d'essai	Points de réglage	Points de contrôle / spécifications de réglage	Méthode de réglage
	V	H				
9	RÉGLAGE DU GAIN DE CENTRAGE DE PISTE					
	50mV/div. 5mV/div. Canal 1 (X). Canal 2 (Y) (Sonde 10 : 1)		Axe X : TP1 Broche 3 (TRK. IN) Axe Y : TP1 Broche 2 (TRK. ERR)	VR4 (TRK. GAN)	Déphasage 90°	<ul style="list-style-type: none"> ● L'alimentation étant coupée (POWER OFF), raccorder un oscilloscope et un oscillateur de la manière indiquée à la figure 7-12. ● Régler l'appareil en mode de lecture normale. ● Enclencher l'alimentation de l'oscillateur et fournir un signal de 1,2 kHz à 2 Vc-c. <p>Note : En fonction de l'oscillateur utilisé, certains appareils fournissent un courant continu lors de leur enclenchement. Par conséquent, il est préférable de raccorder l'oscillateur après avoir enclenché son alimentation.</p> <ul style="list-style-type: none"> ● Ajuster le potentiomètre VR4 TRK GAN (gain de centrage de piste) de façon à ce que la figure de Lissajou sur l'oscilloscope devienne un cercle horizontal (déphasage 90°).

Fig. 7-12

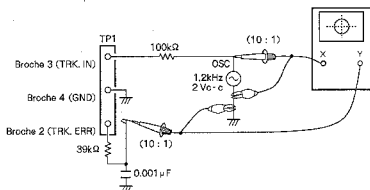


Fig. 7-12

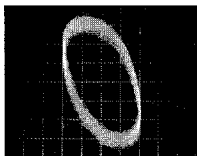


Photo. 7-12
Gain sur-compensé

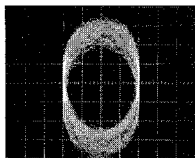


Photo. 7-13
Gain optimal

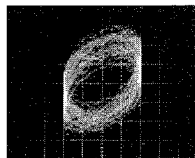


Photo. 7-14
Gain sous-compensé


Pas No.	Réglage de l'oscilloscope		Points d'essai	Points de réglage	Points de contrôle / spécifications de réglage	Méthode de réglage
	V	H				
10	RÉGLAGE DE LA FRÉQUENCE PROPRE DU VCO					
			TP2 Broche 8 (PLCK)	VR8 (VCO. ADJ)	4,275 ± 0,01MHz	<ul style="list-style-type: none">● Régler le mode d'essai (TEST).● Court-circuiter entre broches 25 et 26 de l'IC1 dans l'assemblage DEGT à l'aide d'un ⊙ tournevis.● Reconnecter un fréquencemètre capable de mesurer au-dessus de 10 MHz à la broche 8 de TP2 (PLCK).● Ajuster le potentiomètre VR8 VCO ADJ (réglage du VCO) de façon à ce que la valeur indiquée par le fréquencemètre devienne égale à 4,275 ± 0,01MHz.
11	MÉTHODE DE CONTRÔLE DE LA CARACTÉRISTIQUE S (ERREUR DE FOCALISATION)					
			TP1 Broche 6 (FCS. ERR)			<ul style="list-style-type: none">● Régler le mode d'essai (TEST).● Réaliser un court-circuit entre la broche 5 FCS.IN (entrée de focalisation) de TP1 et la terre GND.● Appuyer sur la touche d'avance de piste  et observer simultanément la forme d'onde à la broche 6 FCS.ERR (erreur de focalisation) de TP1 au moyen d'un oscilloscope.

Photo. 7-15 Erreur de mise au point

7. AJUSTES

7.1 AJUSTES MECÁNICOS

7.1.1 SECCIÓN PRINCIPAL

• Tres lados de ajuste sincrónico del menú (Fig. 7-1)

PREPARATIVOS

- Ajuste sin instalar el motor (menú).
 - Fije la polea central al eje del menú con los tornillos.
 - (1) Aplique la correa de sincronización entre la polea de sincronización y la polea central en ambos lados, derecho e izquierdo.
 - (2) Aplicando resorte (tensión) al armazón inferior y la placa tensora, aplique tensión a la correa de sincronización.
 - (3) Fije la placa tensora en el armazón inferior con un tornillo ①.
 - (4) Colocando una placa plana, como una regla, entre ellas, alinee las tres superficies del menú entre sí de forma que queden al mismo nivel.
 - (5) Fije el eje de menú en la polea de sincronización empleando una llave hexagonal.
 - (6) Extraiga la placa colocada sobre el menú y compruebe los ítems siguientes girando manualmente el menú.
1. Compruebe si las tres superficies del menú giran sin interrupción brusca.
 2. Compruebe si todas las tres superficies del menú alineen entre sí de forma que queden al mismo nivel después de girar el eje del menú una vez.

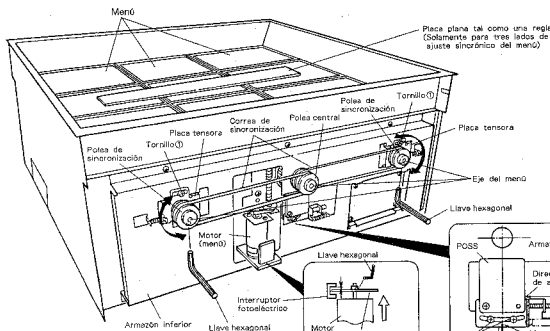


Fig. 7-1

• Ajuste de la posición de parada de la rotación del menú PREPARATIVOS

- Afloje el tornillo ② que sostiene el disco decodificador con una llave hexagonal.
 - Afloje el tornillo ③ que sostiene la placa de ajuste.
 - Ajuste con el motor (menú) instalado.
- (1) Ajuste la separación entre el disco decodificador y el interruptor fotoeléctrico del motor (menú) a $1\frac{1}{16}$ mm. (Fig. 7-2)
 - (2) Fije el tornillo del disco decodificador apretándolo con una llave hexagonal.
 - (3) Gire el tornillo ③ de forma que la marca grabada en la placa de ajuste quede alineada con el armazón inferior. Después apriete temporalmente el tornillo ②.
 - (4) Presione la tecla ROTATE MENU del panel frontal de la unidad principal para que el menú gire. Después realice los ajustes siguientes dependiendo de la condición. (Fig. 7-3)
- Cuando el menú se pare después de haber pasado la parte frontal
 - Afloje el tornillo ② y apriete el tornillo ③ girándolo hacia la derecha.
 - Cuando el menú se pare antes de llegar a la parte frontal
 - Afloje el tornillo ② y gire el tornillo ③ hacia la izquierda para aflojarlo.
- (5) Vuelva a girar el menú y apriete firmemente el tornillo ② cuando el menú se pare dirigiendo sus superficies hacia la parte frontal. (Fig. 7-4 ②)
 - (6) Finalmente, gire el menú y compruebe si se para dirigiendo sus tres superficies hacia la parte frontal cada 120° de rotación.

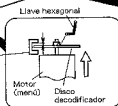


Fig. 7-2

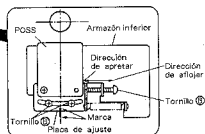


Fig. 7-3

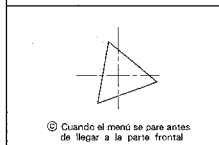
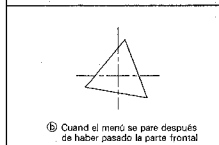
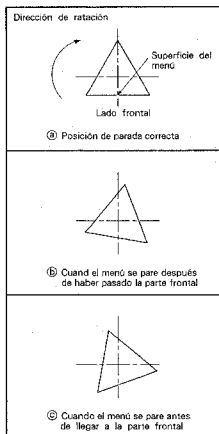


Fig. 7-4

7.1.2 SECCIÓN DE CD

PREPARATIVOS

- Coloque el cargador en el primer y tercer módulo de la unidad principal de CD.
- Conecte el telemando (RU-V101) a la unidad principal de CD.

1. Ajuste aproximado de la posición seleccionada
- (1) Ajuste la distancia entre la parte superior de la placa de sensor y la del chasis principal a 7 mm girando el tornillo A.

2. Ajuste de la posición seleccionada

- (1) Primero, realice el procedimiento siguiente.

- ① Presione las teclas en el orden de [1] + [8] + STILL / STEP ► (DISC SELECT) + STILL / STEP ◀ [1] (DISC RETURN). Cuando termine la operación, compruebe si la separación entre la parte superior de la palanca de rotación y la de la sexta bandeja en el cargador es $0,3^{+0,2}_{-0,1}$.

- ② Si la separación excede a la gama especificada, gire el tornillo A para ajustar la posición de la placa de sensor y vuelva a presionar las teclas en el orden de [1] + [8] + STILL / STEP ► (DISC SELECT) + STILL / STEP ◀ [1] (DISC RETURN) hasta que la separación se vuelva dentro de la gama especificada.

- ③ Presione las teclas en el orden de [6] + STILL / STEP ► (DISC SELECT) + STILL / STEP ◀ [1] (DISC RETURN) y compruebe si la separación entre la parte superior de la palanca de rotación y la de la sexta bandeja en el cargador es $0,3\text{mm} \pm 0,1\text{mm}$.

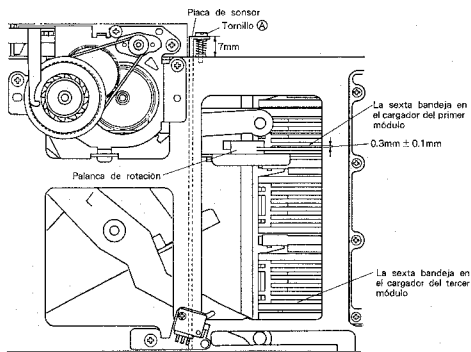


Fig. 7-5

7.2 AJUSTES ELECTRICOS

Los ítems de ajuste de este modelo deberán ser efectuados en el orden mostrado abajo.

• Ítemes de ajuste y comprobación

1. Ajuste de desviación de seguimiento, foco y RF.
2. Ajuste del nivel de RF
3. Confirmación de la alimentación de salida de LD (diodo láser)
4. Confirmación de enclavamiento del enfoque y del eje
5. Ajuste del retículo
6. Ajuste del equilibrio de seguimiento
7. Ajuste tangencial
8. Ajuste de la ganancia de enfoque
9. Ajuste de la ganancia de seguimiento
10. Ajuste de la frecuencia propia de VCO
11. Método para confirmar el carácter S (error de enfoque)

• Equipo de medición

1. Osciloscopio de doble traza
2. Medidor de alimentación del láser
3. Disco de prueba (YEDS-7)
4. Filtro de ajuste de equilibrio de seguimiento
5. Filtro de ajuste de ganancia de bucle
6. Generador de señal
7. Contador de frecuencia
8. Otras herramientas generales
9. Telemando (RU-V101)

• Modo de operación

Si conecta el telemando (RU-V101) a la unidad principal de CD, podrá operarla a distancia.

Con respecto a la operación refiérase al manual de operación (1). (ARP2047): Modo de operación (página 14)

Nota: Antes de operar el telemando (RU-V101), mueva el mecanismo con las teclas numéricas + teclas STILL/STEP/▶ (DISC SELECT) hasta la posición donde se ha colocado el disco de prueba.

• Tores variables (VR) de ajuste y sus nombres

- VR1: Alimentación del láser
 VR2: Compensación de RF (RF.OFS)
 VR3: Ganancia de enfoque (FCS.GAN)
 VR4: Ganancia de seguimiento (TRK.GAN)
 VR5: Equilibrio de seguimiento (TRK.BAL)
 VR6: Desviación de enfoque (FCS.OFS)
 VR7: Desviación del seguimiento (TRK.OFS)
 VR8: Ajuste de VCO (VCO.ADJ)

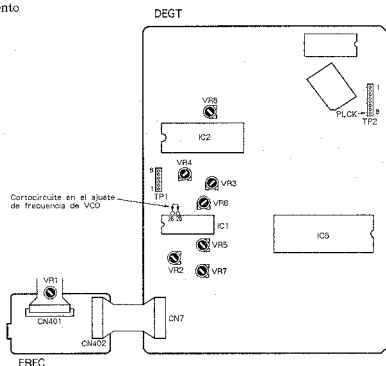
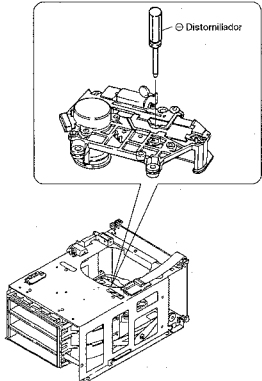
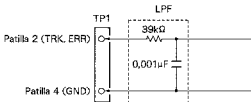


Fig. 7-6 Punto de ajuste

No. de paso	Ajuste del osciloscopio		Puntos de prueba	Puntos de ajuste	Items de verificación/ Especificaciones de ajuste	Procedimiento de ajuste
	V	H				
1	AJUSTES DE LA DESVIACIÓN DE SEGUIMIENTO, FOCO Y RF					
			Patilla 2 de TP1 (TRK. ERR) Patilla 6 de TP1 (FCS. ERR) Patilla 1 de TP1 (RF OUTPUT)	VR5 (TRK. BAL) VR7 (TRK. OFS) VR6 (FCS. OFS) VR2 (RF. OFS)	Desviación de seguimiento 45° 0V ± 50mV Compens. de foco 0V ± 50mV Compens. de RF 100mV ± 50mV	<ul style="list-style-type: none">● Ajuste el modo de TEST.● Gire el volumen de TRK. BAL (Equilibrio de seguimiento) de VR5 en el sentido de las manecillas del reloj 45° del centro.● Ajuste VR7 TRK. OFS (de seguimiento) de modo que el voltaje en TRK. ERR (desviación de seguimiento) de la patilla 2 de TP1 se ponga en 0V ± 50mV.● Ajuste VR6 FCS. OFS (compensación de foco) de modo que el voltaje de FCS. ERR (error de foco) en la patilla 6 de TP1 sea 0V ± 50mV.● Ajuste VR2 RF. OFS (compensación de RF) de modo que el voltaje de salida de RF en la patilla 1 de TP1 sea 100mV ± 50mV.
2	AJUSTE DEL NIVEL DE RF					
			Patilla 1 de TP1 (RF)	Alimentación del laser VR1	1.5Vp-p ^{+0.2V} _{-0V}	<ul style="list-style-type: none">● Ajuste el modo de TEST.● Reproduzca el disco de TEST y conecte la sonda de un osciloscopio a la RF de la patilla 1 (Salida de RF) de TP1 y mida el voltaje de P-P de la forma de onda de RF.● Ajuste VR1 (alimentación del láser) que el valor sea 1.5Vp-p ^{+0.2V}_{-0V}.
3	CONFIRMACIÓN DE LA ALIMENTACIÓN DE SALIDA DE LD (DIODO LÁSER)					
					Confirmación Menos de 0.13mW	<ul style="list-style-type: none">● Ajuste el modo de TEST.● Presione la tecla de [MULTI-SPEED]+[0] y encienda el LD (Diodo láser).● Ubique el sensor del medidor de potencia del láser inmediatamente arriba del objetivo, y confirme que la potencia de salida del LD sea menos de 0.13mW.
4	CONFIRMACIÓN DE ENCLAMIENTO DEL ENFOQUE Y DEL EJE					
	0.5V/div	100mseg /div	Patilla 1 de TP1 (Salida de RF)		Existe salida de RF Rotación normal	<ul style="list-style-type: none">● Ajuste del disco de TEST.● Ajuste el modo de TEST.● Cambie el captador cerca del centro del disco presionando la tecla de [MULTI-SPEED]+[4].* Tenga en cuenta que este paso deberá ser ejecutado.● Observe RF (Radio frecuencia) de la patilla 1 de TP1 con un osciloscopio y confirme que se saque la señal de RF después de presionar la tecla de [MULTI-SPEED]+[1].● Presione la tecla de [MULTI-SPEED]+[2] y asegúrese que el disco rota en la dirección normal casi a la velocidad especificada (tal como está cerca del centro del disco, la velocidad de rotación es alrededor de 300rpm) y que no rote anormalmente o inversamente.

No. de paso	Ajuste del osciloscopio		Puntos de prueba	Puntos de ajuste	Items de verificación/ Especificaciones de ajuste	Procedimiento de ajuste
	V	H				
5	AJUSTE DEL RETÍCULO					
	 <p>Fig. 7-7</p>					<ul style="list-style-type: none"> ● Ajuste el modo TEST. ● Cambie el captador cerca del centro del disco presionando la tecla de [MULTI-SPEED+] + [2] de modo que el tornillo de ajuste de retículo del captador pueda ser visto a través del orificio oval en el lado superior del servomecanismo. ● Inserte un \ominus destornillador en el orificio del lado superior or del mecanismo como se muestra en la Fig. 7-7, y confirme que gira el tornillo de retículo. ● Presione la tecla de [MULTI-SPEED+] + [1] y [MULTI-SPEED+] + [2] secuencialmente y cierre el servo de enfoque y el del eje. (No cierre el servo de seguimiento.) ● Observe la forma de onda en TRCK. ERR (Error de seguimiento) de la patilla 2 de TP1 con un osciloscopio. Luego inserte un filtro de paso bajo de corte. (Fig. 7-8)
0.5V/div	5mseg /div	Patilla 2 de TP1 (TRK. ERR)	Reticulo	Punto cero	Amplitud máxima	<ul style="list-style-type: none"> ● Gire el \ominus destornillador y encuentre el punto cero. (Foto. 7-1) ● Luego, gire lentamente el \ominus destornillador hacia el sentido contrario del reloj desde el punto cero y ajuste en el punto donde la forma de onda (Señal de error de seguimiento) primeramente se ponga a una amplitud máxima. (Vea Foto. 7-2) <p>Nota:</p> <p>Si el \ominus destornillador se presiona fuertemente, el captador se mueve hacia el centro del disco, por consiguiente el ajuste resulta difícil.</p> <ul style="list-style-type: none"> ● Finalmente, asegúrese de confirmar que la señal de error de seguimiento (en este momento, no se ha insertado el filtro de paso bajo de corte de 4kHz) cuando el captador se mueve hacia el centro del disco y el voltaje de P-P de la señal de error de seguimiento en la circunferencia exterior del disco no haya variado considerablemente. Cuando se desvía el nivel arriba de $\pm 10\%$, ajuste de nuevo girando el tornillo de retículo a un punto de amplitud de error mínimo.
						 <p>Fig. 7-8</p>

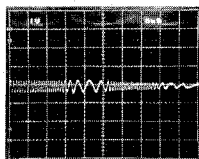


Foto. 7-1
Punto nulo

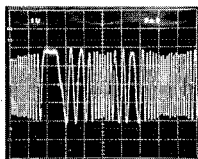


Foto. 7-2
Amplitud máxima

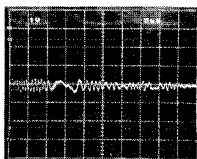
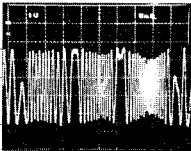
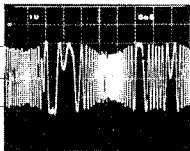
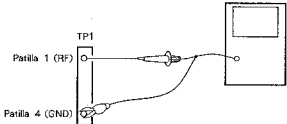
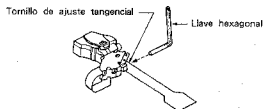
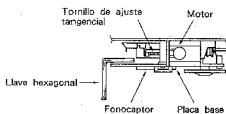


Foto. 7-3
Esta no es la forma de onda de punto nulo

No. de paso	Ajuste del osciloscopio		Puntos de prueba	Puntos de ajuste	Ítems de verificación/ Especificaciones de ajuste	Procedimiento de ajuste
	V	H				
6	AJUSTE DEL EQUILIBRIO DE SEGUIMIENTO					
	0,5V/div	5mseg /div	Patilla 2 de TP1 (TRK. ERR)	VR5 (TRK. BAL)	TRK. ERR	<ul style="list-style-type: none"> ● Ajuste el disco de TEST. ● Ajuste el modo de TEST. ● Cambie el captador cerca del centro del disco presionando la tecla de [MULTI-SPEED+] + [4]. ● Presione la tecla de [MULTI-SPEED+] + [1] y la tecla de [MULTI-SPEED+] + [2] para comenzar a voltear el disco. ● Observe TRK. ERR (Error de seguimiento) de la patilla 2 de TP1 con un osciloscopio y ajuste con el volumen de TRK. BAL (Equilibrio de seguimiento) de VR5 de modo que la componente de CC del error de seguimiento desaparezca. <p>Nota: Antes de realizar los ajustes indicados arriba, asegúrese de compensar el error de seguimiento.</p>
<div style="display: flex; align-items: center; justify-content: space-around;"> <div style="text-align: center;">  <p>A ≠ B</p> </div> <div style="font-size: 2em;">→</div> <div style="text-align: center;">  <p>A = B</p> </div> </div>						
<p style="text-align: center;">Foto. 7-4</p> <p style="text-align: center;">Elementos de CC mezclados en la señal</p>						
<p style="text-align: center;">Foto. 7-5</p> <p style="text-align: center;">Elementos de CC eliminados</p>						

No. de paso	Ajuste del osciloscopio		Puntos de prueba	Puntos de ajuste	Items de verificación/ Especificaciones de ajuste	Procedimiento de ajuste
	V	H				
7	AJUSTE TANGENCIAL					
	200nseg /div	Patilla 1 de TP1 (Salida de RF)	Tornillo de ajuste de la tangencial	Mejor imagen de prueba	<ul style="list-style-type: none">● Ajuste el disco de TEST.● Ajuste el mode de TEST.● Cambie el carro cerca del centro del disco presionando la tecla de $\boxed{\text{MULTI-SPEED}} + \boxed{4}$.● Presione la tecla de $\boxed{\text{MULTI-SPEED}} + \boxed{1}$, $\boxed{\text{MULTI-SPEED}} + \boxed{2}$ y $\boxed{\text{MULTI-SPEED}} + \boxed{3}$ secuencialmente, y cierre todos los servos. (El indicador de pausa se enciende.)● Observe el RF de la patilla 1 (Salida de RF) de TP1 con un osciloscopio y ajuste con el tornillo de la tangencial de modo que la imagen de prueba resulte nítida. (Fig. 7-9 y 7-10)● El punto de ajuste es el punto medio entre el punto donde la imagen de prueba se deteriora girando el tornillo de la tangencial en el sentido de las manecillas del reloj, y el punto donde la imagen de prueba se deteriora girando el tornillo de la tangencial en contra del sentido de las manecillas del reloj. Como un criterio, observe que la forma de onda en conjunto sea nítida y que una de las figuras de diamante esté dentro de la imagen de prueba (Foto. 7-7), y ajuste al punto óptimo donde la forma de diamante se vea relativamente como una línea fina.	
<div></div> <p>Fig. 7-9</p> <p>(Nota) Durante el ajuste, sostenga la llave hexagonal hacia arriba para evitar que el cuerpo del captador vaya hacia abajo.</p>						



En la figura siguiente, las partes superior e inferior son copuestas a las del producto real.

Fig. 7-10 Ajuste tangencial

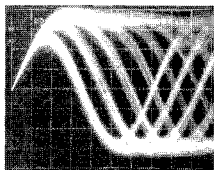


Foto. 7-6

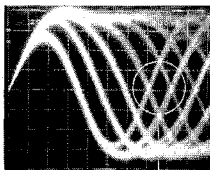


Foto. 7-7

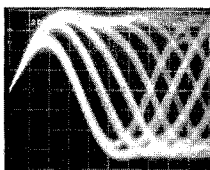


Foto. 7-8

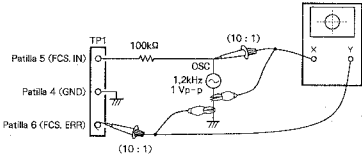
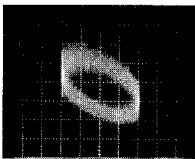
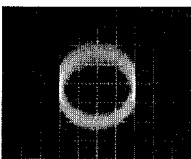
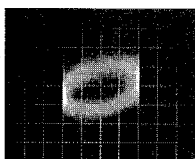
Parte que debe observar

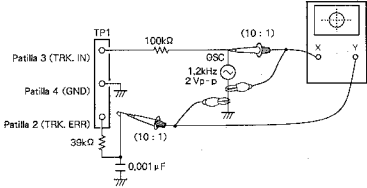
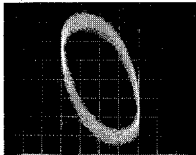
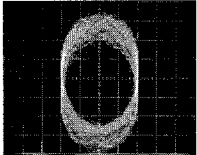
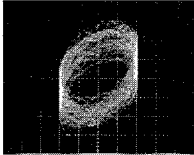


Insatisfactorio

Ajuste óptimo

Insatisfactorio

No. de paso	Ajuste del osciloscopio		Puntos de prueba	Puntos de ajuste	Ítems de verificación/ Especificaciones de ajuste	Procedimiento de ajuste
	V	H				
8 AJUSTE DE LA GANANCIA DE ENFOQUE						
	20mV/div. 5mV/div. CH1 (X). CH2 (Y). (SONDA 10:1)		Eje X : Patilla 5 de TP1 (FCS.IN) Eje Y : Patilla 6 de TP1 (FCS.ERR)	VR3 (FCS.GAN)	Diferencia de fase 90°	<ul style="list-style-type: none"> ● En el estado de POWER OFF (apagado), conecte el osciloscopio y el oscilador como se muestra en la Fig. 7-11. ● Ponga la unidad en el modo de reproducción (PLAY) normal. ● Encienda el oscilador y extraiga 1.2kHz 1Vp-p. <p>Nota: Dependiendo de los osciladores, algunos de ellos producen CC cuando son encendidos. Por lo tanto, es conveniente conectar el oscilador después del encendido.</p> <ul style="list-style-type: none"> ● Ajuste con el volumen de FCS.GAN (Ganancia de enfoque) de VR3 de modo que la figura de Lissajous del osciloscopio a ser un círculo horizontal (90° de diferencia de fase).
 <p style="text-align: center;">Fig. 7-11</p>						
<div style="display: flex; justify-content: space-around; align-items: flex-end;"> <div style="text-align: center;">  <p>Foto. 7-9 Ganancia sobrecompensada</p> </div> <div style="text-align: center;">  <p>Foto. 7-10 Ganancia óptima</p> </div> <div style="text-align: center;">  <p>Foto. 7-11 Ganancia subcompensada</p> </div> </div>						

No. de paso	Ajuste del osciloscopio		Puntos de prueba	Puntos de ajuste	Ítems de verificación/ Especificaciones de ajuste	Procedimiento de ajuste
	V	H				
9	AJUSTE DE LA GANANCIA DE SEGUIMIENTO					
	50mV/div. 5mV/div CH1 (X). CH2 (Y) (SONDA 10:1)	Eje X : Patilla 3 de TP1 (TRK.IN) Eje Y : Patilla 2 de TP1 (TRK.ERR)	VR4 (TRK.GAN)	90° de diferencia	<ul style="list-style-type: none"> En el estado de POWER OFF (apagado), conecte un osciloscopio y un oscilador como se muestra en la Fig. 7-12. Ponga la unidad en el modo de reproducción (PLAY) normal. Encienda el oscilador y extraiga 1.2 kHz 2 Vp-p. <p>Nota: Dependiendo en los osciladores, algunos de ellos producen CC cuando son encendidos. Por la tanto, es conveniente conectar el oscilador después del encendido.</p> <ul style="list-style-type: none"> Ajuste con el volumen de TRK. GAN de VR4 (Ganacia de seguimiento) de modo que la figura de Lissajous del osciloscopio llegue a ser un círculo horizontal (90° de diferencia de fase). 	 <p>Fig. 7-12</p>
 <p>Foto. 7-12</p> <p>Ganancia sobrecompensada</p>						
 <p>Foto. 7-13</p> <p>Ganancia óptima</p>						
 <p>Foto. 7-14</p> <p>Ganancia subcompensada</p>						

No. de paso	Ajuste del osciloscopio		Puntos de prueba	Puntos de ajuste	Items de verificación/ Especificaciones de ajuste	Procedimiento de ajuste
	V	H				
10	AJUSTE DE LA FRECUENCIA PROPIA DE VCO					
			Patilla 8 de TP2 (PLCK)	VR8 (VCO. ADJ)	4.275 ± 0.01MHz	<ul style="list-style-type: none">● Ajuste el modo de TEST.● Cortocircuite entre las patillas 25 y 26 de IC1 en el ensamblaje DEGT con un destornillador Ⓢ, etc.● Conecte el frecuencímetro, que pueda medir arriba de 10 MHz, a la patilla 8 de TP2 (PLCK).● Ajuste con el volumen VCO ADJ (ajuste de VCO) de VR8 de modo que el valor del frecuencímetro se ponga en 4.275 ± 0.01 MHz.
11	MÉTODO PARA CONFIRMAR EL CARÁCTER S (ERROR DE ENFOQUE)					
			Patilla 6 de TP1 (FCS. ERR)			<ul style="list-style-type: none">● Ajuste el modo de TEST.● Haga un cortocircuito entre FCS.IN (Entrada de enfoque) de la patilla 5 de TP1 y GND.● Presione la tecla de [MULTI-SPEED]+[I] y observe la forma de onda de FCS.ERR (Error de enfoque) de la patilla 6 de TP1 con un osciloscopio.

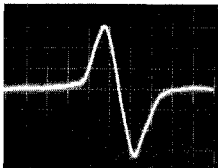


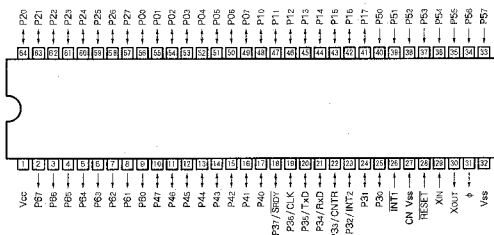
Foto. 7-15 Error de enfoque

8. IC DESCRIPTION

■ M50747SP

SYSTEM CONTROL (ROM LESS TYPE)

● Pin connections (Top view)



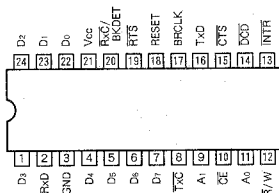
● Pin functions

Pin	Mark	Pin name	I/O	Function
1	Vcc	Power supply input	I	Apply +5V to Vcc.
2 - 9	P67 - P60	Output port P6	O	8 bits output port.
10 - 17	P47 - P40	Input/output port P4	I/O	8 bits input/output port.
18	P37/SRDY	Input/output port P3		8 bits input/output port. When P36, P35 and P34 is used for serial I/O, it respectively become CLK, TxD and RxD. When P37 is used for serial I/O of the clock synchronized type, it becomes SRDY. P33 is combined with I/O terminal of timer X (CNTR). P32 is combined with lowermost interrupt.
19	P36/CLK			
20	P35/TxD			
21	P34/RxD			
22	P33/CNTR			
23	P32/INT2			
24	P31	Interrupt input		Upper most interrupt input terminal.
25	P30			
26	INT1			
27	CN Vss	CN Vss input	I	Connect to Vss.
28	RESET	Reset input	O	Set the "L" more than 2μs, it becomes reset state.
29	XIN	Clock input		Connect the crystal resonator.
30	XOUT	Clock output		
31	φ	Timing output	O	Timing output.
32	Vss	Power supply input	I	Apply 0V to Vss.
33 - 40	P57 - P50	Input port P5	I/O	8 bits input port.
41 - 48	P17 - P10	Input/output port P1		8 bits input/output port.
49 - 56	P07 - P00	Input/output port P0		8 bits input/output port.
57 - 64	P27 - P20	Input/output port P2		8 bits input/output port.

HD64941

WALL BOX COMMUNICATION

Pin connections (Top view)



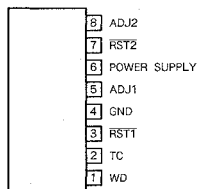
Pin functions

Pin	Mark	Pin name	I/O	Function
1	D ₃	DATA BUS ₀	I/O	Bilateral data bus which using for data transfer with the CPU. High impedance at the reset.
4-7	D ₄ -D ₇	DATA BUS ₇		
22-24	D ₀ -D ₂	DATA BUS ₂		
2	RxD	RECEIVER DATA	I	Serial data input terminal to the reception section. "Mark" : "H", "Space" : "L"
16	TxD	TRANSMITTER DATA	O	Serial data output terminal from the transmission section. "Mark" = "H", "Space" : "L" "H" at the transmission section is not operated, and "H" at the reset.
3	GND	GROUND		Ground
21	Vcc	POWER SUPPLY		+5V power supply.
8	TxC	TRANSMITTER CLOCK		Clock input terminal of the transmission section. TxD is used to synchronize with the transmission data when using the external transmission clock. TxC is used for the 1X/16X clock output terminal when using the internal transmission clock. Input state at the reset.
9	A ₁	ADDRESS LINE c,1		Signal for select the internal register.
11	A ₀			
10	CE	CHIP ENABLE		Addressing terminal of the CPU and internal HD64941. • When CE = L, perform the reading and writing operation to the internal register which is regulated with R/W, A ₀ and A ₁ • When CE = H, set the D ₀ through D ₇ to high impedance state.
12	R/W	READ/WRITE		Terminal for control the direction of the data transfer.
13	INTR	INTERRUPT		Output terminal of the interrupt required signal "H" at the reset.
14	DCD	DATA CARRIER DETECT		Detection input terminal of the data carrier. When DCD is "L", reception section is able to operate.
15	CTS	CLEAR TO SEND		Clear to send (transmission) input terminal. CTS have to "L" for operating the transmission section. When becomes "H" during transmit, the end of transmission after complete the character transmission in the shift register for the transmission.
17	BRCLK	BAUD RATE CLOCK		Clock input terminal for generating the internal baud rate, It's useless to use the external transmission and reception clocks (TxC and RxC.)
18	RESET	RESET		"0"clear terminal of the mode register 1 and 2, command register and status register.
19	RTS	REQUEST TO SEND		General-purpose output terminal. RTS outputs which inverting the bit 5 of the command register (CR). Usually, it is used for require the transmission.
20	RxC /BKDET	RECEIVER CLOCK / BREAK DETECTION		Clock input terminal of reception section. RxC is used to synchronize with the reception data when using the external reception clock. RxC is used for the output signal of brake detection (BK-DET) and the 1X/16X clock output terminal when using the internal reception clock. Input state at the reset.

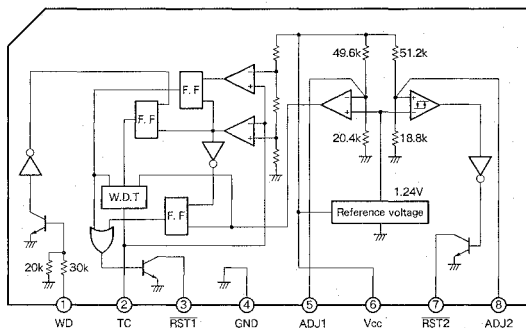
■ M5295L

WATCH-DOG TIMER

● Pin connections (Top view)



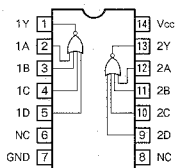
● Block diagram



TC74HC4002AP

DUAL 4-INPUT NOR GATE

● Pin connections (Top view)



Truth table

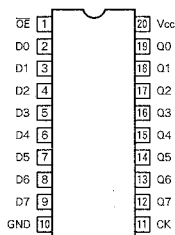
A	B	C	D	Y
H	X	X	X	L
X	H	X	X	L
X	X	H	X	L
X	X	X	H	L
L	L	L	L	H

X: Don't care

TC74HC574AP

OCTAL D-TYPE FLIP-FLOP WITH 3-STATE OUTPUT

● Pin connections (Top view)



Truth table

INPUT			OUTPUTS
\overline{OE}	CK	D	Q (S74A)
H	X	X	Z
L		X	Q_n
L		L	L
L		H	H

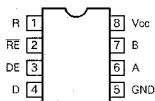
X: Don't Care

Z: High impedance

Q_n (Q_n): No change

SN75176BP

● Pin connections (Top view)



Truth table

INPUT	ENABLE	OUTPUTS	
		A	B
H	H	H	L
L	H	L	H
X	L	Z	Z

H = high level,

L = low level,

X = irrelevant,

Z = high impedance (off)